Applied Research Branch
Strategic Policy
Human Resources Development Canada

Direction générale de la recherche appliquée
Politique stratégique
Développement des ressources humaines Canada

The Impacts of Non-Parental Care on Child Development

W-00-2E

by
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August 1999

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Publication Date / Date de parution—Internet 2000
ISBN: 0-662-28681-2
Cat. No./N° de cat. MP 32-30/00-1E

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Executive Summary

There has been a dramatic increase in the rate of employment for mothers with pre-school-aged children from 1967 to 1997, 17% to 65% respectively (Beach, Bertrand, & Cleveland, 1998). There has also been an increase in the percentage of children living in single parent homes up from 10% in 1971 to 15.7% in 1994 (Lefebvre & Merrigan, 1998). These changes have led to a significant shift in the demand for child care in Canada. In the 1994-1995 sample of the National Longitudinal Survey of Children and Youth (NLSCY), 33.2% of Canadian children under eleven and 39.9% of children age five or younger (Ross, Scott and Kelly, 1996) were receiving some form of regular non-parental care while their parents worked or studied.

Shortly after these demographic shifts were first recognized, almost three decades ago, social scientists and policy makers in North America began to seek an understanding of their implications for child development. Early research on non-parental care (1970s) focused principally upon disadvantaged children growing up in high-quality, university-based daycare centres. As a result, much of the research focused on daycare in regulated centres and this form of care is often equated with the term "child care" itself. However, non-parental care (NPC) can involve many different forms of care including care inside and outside of the child's home or care by relative or non-relative caregivers, who may or may not be licensed.

This paper builds on previous work by the Applied Research Branch (ARB) including a variety of working papers on the impacts on NPC and a commissioned paper by Gordon Cleveland and Douglas Hyatt, which examined the feasibility of measuring NPC using the NLSCY. This paper represents a more detailed look at the issue of NPC and sets out a framework through which the various forms of care can be measured using the NLSCY.

An annotated bibliography of current research was commissioned and is presented in the first chapter. The remainder of the paper builds on the research found in the bibliography. Section 3 discusses the process and content issues to be considered when measuring NPC on a large scale survey such as the NLSCY. Following the Issues chapter, a research framework was developed to guide the data, research, and policy strategy for the Applied Research Branch. The final chapter deals with specific recommendations and outstanding methodological issues to be considered when measuring NPC through both the NSLCY and a telephone-based care provider survey. This

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addresses the recommendations made by Norris, Brink, and Mosher (reviewed in section 2.6) in a technical paper discussing the importance of, and most feasible way, of collecting data directly from the child's care provider. These instruments were implemented in the Understanding the Early Years Community Component Initiative that was pilot tested in North York, Ontario, in the spring and summer of 1999.[1]

[1] For more information on the Understanding the Early Years Initiative and the North York project please see Connor, S. & Brink, S. *Understanding the Early Years: Community Impacts on Child Development*, Human Resources Development Canada, Applied Research Branch Working Paper W-99-6E, August 1999.

Sommaire

Le taux d'emploi des femmes ayant des enfants d'âge préscolaire a augmenté de façon draconienne entre 1967 et 1997; passant de 17 % à 65 % (Beach, Bertrand et Cleveland, 1998). Le pourcentage d'enfants vivant dans une famille monoparentale a également augmenté, passant de 10 % en 1971 à 15,7 % en 1994 (Lefebvre et Merrigan, 1998). Ces modifications ont entraîné à leur tout une hausse de la demande pour ce qui est des services de garde d'enfants au Canada. D'après l'échantillon de 1994-1995 prélevé dans le cadre de l'Enquête longitudinale nationale sur les enfants et les jeunes (ELNEJ), 33,2 % des enfants canadiens âgés de moins de 11 ans et 39,9 % des enfants âgés de 5 ans ou moins (Ross, Scott et Kelly, 1996) recevaient une forme quelconque de services de garde non parentale pendant que leurs parents travaillaient ou étudiaient.

Peu de temps après avoir constaté ces changements démographiques, il y a près de trois décennies, les sociologues et les décideurs de l'Amérique du Nord ont commencé à essayer de comprendre les répercussions sur le développement de l'enfant. Les premières recherches sur la garde non parentale (réalisées dans les années 70) mettaient l'accent principalement sur les enfants défavorisés qui recevaient des soins dans des garderies de grande qualité, situées en milieu universitaire. Par conséquent, la plupart de ces recherches mettaient l'accent sur les soins prodigués dans des centres réglementés et cette forme de soins est souvent assimilée à l'expression « garde d'enfants » proprement dite. Cependant, la garde non parentale (GNP) peut prendre diverses formes, notamment les soins prodigués dans la résidence de l'enfant ou ailleurs, par un membre de la famille ou une autre personne qui peut ou non détenir un permis.

Le présent document s'inspire de travaux effectués antérieurement par la Direction générale de la recherche appliquée (DGRA), notamment divers documents de discussion portant sur les répercussions de la GNP et un document commandé à Gordon Cleveland et Douglas Hyatt et portant sur le bien-fondé de l'évaluation de la GNP au moyen de l'ELNEJ. Ce document examine de plus près la question de la GNP et propose un cadre pour l'évaluation des diverses formes de soins au moyen de l'ELNEJ.

Le premier chapitre renferme une bibliographie annotée faisant état des recherches courantes. Le reste du document table sur les recherches dont il est question dans cette bibliographie. La

section 3 traite du processus et du contenu dont il faut tenir compte pour évaluer les services de garde non parentale dans le cadre d'une enquête de grande envergure comme l'ELNEJ. Le chapitre portant sur les enjeux est suivi d'un cadre de recherche élaboré pour orienter les données, les recherches et la politique de la Direction générale de la recherche appliquée. Le dernier chapitre porte sur des recommandations précises et sur des questions méthodologiques en suspens dont il faut tenir compte pour évaluer la garde non parentale dans le cadre de l'ELNEJ et d'un sondage téléphonique auprès des prestataires de soins. Cette façon de procéder tient compte des recommandations formulées par Norris, Brink et Mosher (examinées dans la section 2.6) dans un document technique portant sur l'importance de la collecte de données directement auprès des prestataires de soins et sur la méthode la plus appropriée pour recueillir des données. Ces outils ont été mis en œuvre dans le cadre de l'initiative Comprendre la petite enfance, qui a fait l'objet d'un projet pilote à North York (Ontario) au printemps et à l'été de 1999[2].

[2] Pour plus de renseignements à propos de l'initiative Comprendre la petite enfance et du projet de North York, voir le document de Connor, S. et Brink, S., intitulé *Understanding the Early Years: Community Impacts on Child Development*, Développement des ressources humaines Canada, Direction de la recherche appliquée, document de travail W-99-6E, août 1999.

Acknowledgements

The authors would like to thank Narinder Brar for contributing the annotated bibliography to this paper, and Christina Norris for her insightful comments.

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1. Overview Based on the Literature

1.1 Context

Non-Parental care (NPC) is a common experience for Canadian children, about 40% of children aged 0 to 5 are cared for on a regular basis in some type of care arrangement (National Longitudinal Survey of Children and Youth data). Most of these children are cared for outside their home and just under one third receive care in a licensed care arrangement. This bibliography represents a focused review of relevant literature on NPC that was used to guide the framework for research on the impacts of this type of care on children's development. Articles were selected for inclusion based on their ability to contribute to the development of instruments for measuring NPC in a national survey, such as the National Longitudinal Survey of Children and Youth (NLSCY).

There is a lack of consistency in the literature surrounding the definition of child care. The term non-parental care has more recently emerged to reflect the heterogeneity of the type of child care arrangements utilized by parents. Some authors use the term non-*familial* care interchangeably with non-parental care. Both terms refer to care arrangements in which the child is cared for by someone other than his/her parents (and includes children cared for by relatives). It can include care inside or outside of the child's home. This is the definition that will be used for the purpose of this research.

NPC is often subdivided according to the location of the care (i.e. whether care is received in or out of the child's home). Care in the child's home includes care by a relative or a non-relative. Non-relative in-home caregivers can include nannies who are provided room and board in the child's house and other in-home caregivers who come into the child's house during the day. These non-relative in-home caregivers may be arranged through agencies, however they are not typically regulated beyond normal business regulation (Beach, Bertrand, & Cleveland, 1998). Care outside the child's home can take several forms: care in someone else's home by a licensed provider (regulated family daycare); care in someone else's home by an unlicensed provider (unregulated family daycare); care in a relative's home; group-care in a licensed daycare centre; and care in a before or after school or enrichment program. Family child care, family daycare, and

daycare home are terms often used to refer to the care of unrelated children in the home of the care provider.

Section 2 is the annotated bibliography which includes six sections: (1) Theories, concepts, and definitions; (2) Quality of Care; (3) Infants and non-parental care; (4) Preschoolers and non-parental care; (5) After-school non-parental care; and (6) Non-Parental care selection. An overview of each section in the annotated bibliography is presented below.

1.2 Theories, Concepts, and Definitions

Section 2.1 covers the main theories, concepts and definitions that inform empirical research on NPC. Several theories from developmental psychology have been applied to the topic, particularly concerning its influence in the first few years of a child's life. The most significant include attachment, socio-biological, cognitive and social stimulation theories, and theories of intentionality.

Attachment theorists argue for the significance of an infant's relations with an adult attachment figure as a prerequisite for the child's subsequent psychological development. While a number of attachment theorists acknowledge that children form attachments to several people during early childhood, including fathers and other caregivers, the mother-infant relationship has been considered at the base of the hierarchy of relationships. Thus this theory views separation of the infant from the mother during the first year of life as a risk factor for emotional maladjustment.

Sociobiological theories suggest that the closer the genetic relation of a caregiver to a child, the greater the caregiver's investment in providing the best quality of care for that child. In other words, relatedness increases one's level of positive attitudes and behaviours toward a child. It is not surprising then, that sociobiological theorists privilege parental or relative care over other forms of child care.

Cognitive and social stimulation theories are built on the thesis that providing young children with a positive and healthy learning environment, which includes a responsive adult, will promote their cognitive development, whereas the absence of such stimulating opportunities will delay or depress development. These theories advocate that it is the quality of the care rather than the relatedness of the person providing the care that is important.

The concept of intentionality (Galinsky, Howes, Kontos, & Shinn, 1994) addresses the issue of the care provider's motives for providing care. It refers to the care provider's commitment toward caring for children. Providers who are more committed to the child and his/her development are more likely to "pursue opportunities to learn more about child care and education" (p. 60). Such providers would, as a result, offer higher quality care that should lead to positive development outcomes for the child.

While psychological developmental theories continue to guide the types of questions posed by NPC researchers, in recent years, the approach researchers take in collecting data has been influenced by ecological theories of human development. One author explains:

> In their attempts to understand the influence of child care on children's development, researchers have come to understand that these influences are enmeshed in multiple contextual layers that jointly conspire to produce child outcomes. Development typically occurs in multiple contexts (e.g., family and child care), according to Bronfenbrenner (1979, 1986), and the developmental processes that take place in these various contexts are not independent. Bronfenbrenner has termed studies designed to identify the joint influences of multiple settings on development *mesosystem models*. —Kontos, 1994, p.87

Research from this perspective suggests that prediction of children's social, cognitive, and/or language development is increased when both child care and family characteristics - and more recently mother's employment experiences as well - are combined. In other words, particular factors or processes, be they family attitudes, values, or interaction patterns, or child care quality or work stress, will likely turn out to be less important in their own right, especially if other forces of influences are controlled, as they will be in interaction with each other. Available research draws attention to three kinds of interactions that might be discerned, one reflecting compensatory or protective processes, another, lost resources, and a third, multiple risks/risk accumulation.

Central to a compensatory or protective conceptualization is the notion that vulnerability resulting from a child characteristic (temperament) or family attribute (poverty) is not realized when a compensatory child care experience serves to mitigate risks. For example, when a feature of the child (socially fearful) or the family (low income) does not exert its anticipated adverse influence because of social protection provided by a feature of child care (i.e. quality). The idea of lost resources suggests that although child care may serve as a protective factor for children at risk, it

is possible that it may be a risk factor for children who are not at risk (i.e. who have adequate personal and family resources).

Finally, the idea of multiple risks deals with interactions among risk factors found in the child care setting, the family context, or within the child that can function to increase risks. Thus, when sources of risk accumulate - for example, high adult to child ratios or untrained staff in the child care setting, authoritarian parenting, and work stress - child development is likely to be compromised. However, in the face of high-quality care and supportive marital relations, work stress will probably exert little ultimate influence. To take another example, the NICHD Early Child Care Research Network found that when relatively insensitive mothering was coupled with either low-quality child care, with more than minimal amounts of child care, or with unstable child care arrangements, infants were more likely to develop insecure attachment than was otherwise expected.

1.3 Quality of Care

Section 2.2 deals with the important issue of the impact of quality of care on child development. Questions about quality first came to the fore when cross-national comparisons revealed that whereas North American studies were discovering the impact of daycare to be generally negative, studies out of Scandinavia were arriving at exactly the opposite conclusion. It became apparent that researchers needed to identify "child care factors" that affected the development of daycare-reared children, particularly factors that might be subject to policy intervention.

Identifying social structural features of care, particularly group size, quality of the physical setting, caregiver training, and caregiver-child ratios, measures that should potentiate warm, enriching, and sensitive interaction care, has proved remarkably successful. Furthermore, there seems to be "a general consensus" among researchers on the factors related to quality and on how the structural features of quality should be measured (Cleveland & Hyatt, 1997; Lamb, 1996). There is disagreement, however, on whether structural indictors alone are sufficient. Many now argue that process quality is equally, if not more, important. Process measures try to quantify the actual care received by children and involve the use of observational indicators (e.g., nature of caregiver-child interactions). The terms "process measures" and "dynamic measures" are used interchangeably in the literature. Like the former, dynamic measures are designed to assess the

quality of the experience provided for children in child care facilities - notably the affective quality of interactions, the developmental appropriateness of the experiences and stimulation, and the sensitivity of the care providers' responses and initiatives (Lamb, 1996). Some studies have found structural and process/dynamic indicators to be highly correlated while others have not.

Unfortunately, research on quality has focused primarily on comparing family daycare to centre daycare rather than on determining the elements of quality that are important. In addition, most of the scales that have been developed to measure quality have been designed for and most often used in centre-based care. Little material exists on relative or home care, most likely because of the private nature of these forms of non-parental care arrangements and the difficulties in gaining access to them.

While staff training, group size, and even caregiver-child ratios have been implicated in studies of variation in daycare quality, the field still lacks specific knowledge about the point at which group size becomes too large, training insufficient, and ratios inadequate.

1.4 Infants and Non-Parental Care

Section 2.3 has been accorded to the effects of NPC on infants since most researchers (influenced by attachment theory and the idea that children's needs vary due to the different developmental stages they go through), make a conceptual distinction between infants and preschoolers. This separation between infants (birth - 2 years) and preschoolers (2 - 5) in the literature was solidified in the 1980s when a series of studies examined children receiving some kind of non-parental care on a routine basis in their first year of life. These studies stimulated a "firestorm" of controversy as they suggested that children in any of a variety of child care arrangements, including centre care, family daycare, and nanny care, for 20 or more hours per week beginning in the first year of life, were at an elevated risk of being classified as insecure in their attachments to their mothers at 12 or 18 months of age and of being more disobedient and aggressive when they are from 3 to 8 years old (Belsky, 1986, 1988).

Opponents of this hypothesis identified problems with the concepts of insecure attachment, emotional insecurity, and social maladjustment: Moreover, research has been unable to elucidate possible mechanisms underlying these phenomena. According to one author, insecure attachment may be indicative of problems associated with separation but it may also be a reflection of earlier

independence and autonomy (Clarke-Stewart, 1989). For example, the greater aggressiveness and lower compliance observed in follow-up studies of children who have received high amounts of non-parental care as infants may actually signify adaptive assertiveness. More importantly, some critics argued that the research under consideration lacked information on quality of care. Many studies are now finding that the positive or negative effects of age of entry to daycare on later child's group behaviour are significantly mediated by the daycare quality. In other words, an early age of entry into daycare, in particular group daycare is not, in itself, a risk factor. Early entry may have detrimental or beneficial effects depending on the quality conditions of the care setting and the family background of the child. The benefits of high quality NPC is most evident for children from low-income families. For example, O'Brien Caughy and colleagues (1994) found that children from impoverished environments who start attending daycare before their first birthday have higher reading recognition and math scores than children from comparable home environments who do not attend daycare at all. Yet, using subjects drawn from the same data set, Baydar and Brooks-Gunn (1991) reported that daycare during the first year was associated with poorer verbal abilities in 3- and 4-year-olds. Sometimes the positive effects of infant daycare on cognitive development may be "sleepers" and not appear until much later, as Broberg and colleagues (1997) found. In general, it seems clear that high-quality educationally oriented programs have positive effects on cognitive performance, particularly for children from disadvantaged backgrounds.

Evidence of effects on behavioural development, like cognitive development is also mixed. Nevertheless, the argument that extensive care in infancy results in maladjustment and increased problematic functioning later on continues to receive a fair amount of empirical support. For example, Bates, et al found that, even though child care experience in the first year of life did not predict behavioural adjustment, when child care experience in the second through fifth year was controlled, extensive care in the first year coupled with extensive care thereafter, was associated with increased problematic functioning in kindergarten. Others argue the effects of early child care on children dissipate over time. In other words, the special importance given to infant care may be misplaced. Although the question of whether behavioural adjustment is benign or has long term effects is still up for debate. Overall an association between non-parental care and behavioural problems continues even though the underlying nature of the association is not always

clear. Furthermore, the special attention given to development during the first year in the literature suggests that this period might be a particularly vulnerable developmental period. Unfortunately, few studies that have focused on behaviour problems have assessed quality of care systematically. Thus, it is not known if these conclusions would still hold if the daycare settings were of high quality.

1.5 Preschoolers and Non-Parental Care

Section 2.4 is concerned with the effects of non-parental care on preschoolers. There are considerably more studies of preschoolers than of infants. Furthermore, researchers are more in agreement about, and willing to recognize the benefits of NPC for this age group, in particular with respect to cognitive development. Of the various forms of non-parental care, studies have found that children in daycare centres perform better on cognitive tests than children receiving in-home care, or family daycare (Kohen & Hertzman, 1998). When the centres are "typical community centres," the positive cognitive outcomes are more modest (Peisner-Feinberge & Burchinal, 1997). In the case of children from low-income families however, those who participate in any type of care arrangements outside the home, regardless of whether it is regulated or not, have superior cognitive skills to those who are cared for at home by a relative or those who use no other care arrangements (Kohen & Hertzman, 1998). While there are different developmental outcomes on the basis of type of care arrangement, again many researchers argue it is the quality of the care that is the determining factor.

On the issue of behavioural outcomes the evidence is a little less straightforward. Generally, preschoolers in centre care are found to be more socially competent (self-confident and out-going) than children in daycare homes or with in-home caregivers. Such competence may aid them in adjusting to new environments, including kindergarten. There may even be something about the absence of the mother that encourages a positive orientation toward peers. On the negative side, concerns have been expressed that early rearing in a peer-oriented environment will deter the development of children's individuality and creativity. That is to say, in a peer culture, children become dependent on peers rather than adult authority. Under these circumstances, they may be less likely to conform to standards for socially acceptable behaviours.

1.6 After-School Care

Section 2.5 examines results from research on After-School Care (ASC). The term *after-school care* tends to be defined more broadly than the words themselves suggest. Since many parents work early mornings or late evenings, some children might be placed in various forms of non-parental care during these times. Therefore, many authors have expanded the term to include not only care in the afternoons (as is typically studied) but also mornings before school, as well as evenings. In their work on paid non-parental care outside daycare centres, the Human Resources Investment Branch (HRIB) of HRDC defined non-parental care as paid care on a regular basis (10 hours a week at least eight months of the year) while the parent(s) work or study.

The need for non-parental care does not end when children enter the elementary educational system at around 6 years of age, particularly as parental employment rates continue to rise in association with children's ages, and have always been higher for parents with school-age than pre-school-age children or infants. For many years now, great concern has been expressed about the safety and welfare of unsupervised or "latchkey" children. Early American studies of inner-cities found that unsupervised girls had poorer achievement test scores and poorer relationships with their peers at school (Woods, 1972). However, what most studies examining the effects of after school care have lacked is consideration of the extent and range of after-school care arrangements, and the multiplicity of arrangements that the child may be involved in at a given time. When these factors are incorporated, the amount of involvement in self-care is associated with later adjustment problems. Perhaps even more interestingly, contrary to popular belief, higher income families are most likely to use latchkey arrangements (Pettit, Laird, Bates, & Dodge, 1997). In addition, according to Vandell and Ramanan (1991), children of single-parent families who return home to their mother after school have more antisocial behaviours, more peer conflicts, and lower Peabody Picture Vocabulary Test (PPVT) scores than do children in other types of ASC, including self-care. Among lower Socio-Economic Status (SES) children, daycare and sitter/relative care appears to buffer the effects of low SES in that they show better adjustment and outcomes than their counterparts who are not involved in these types of care (Pettit *et al.*, 1997).

1.7 Child Care Selection

Section 2.6 examines research on child care selection. In Canada, unregulated care outside the home (e.g. family child care) is the most prevalent form of care arrangement (Kohen & Hertzman, 1998). We know very little about why parents' choose this form over others. In studying the child care experience, it is vital to understand what influences parents' decisions about care arrangements. According to Fuller, *et al.* geographical location, maternal characteristics and family structure influence the child care selection process. Mother's employment during pregnancy, education and martial status (single) is positively associated with child care use. However, women who delay childbearing are less likely to place their children into regular non-parental care (at least in North America).

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2. Annotated Bibliography

2.1 Theories, Concepts, and Definitions

2.1.1 Non-Parental Caregiving, Clarke-Stewart, K. Alison; Allhusen, Virginia D.; Clements, Darlene C. In M.C. Bornstein (ed.) *Handbook of Parenting: Volume 3. Status and social conditions of parenting*. (1995). Mahwah, New Jersey: Lawrence Erlbaum Associates. p. 151-176

2.1.1.1 Keywords: "ecology" of centre-based and family daycare, theories of non-parental care, family roles of non-parental caregivers, attachment figures, United States.

Background: This is a chapter in a handbook on parenting in which the authors review the theories and studies that are concerned with the effects of non-parental care on young children's social and cognitive development. Three specific theories are identified and discussed. *Attachment theory* argues that an infant's relationship with an adult attachment figure is of vital importance for his or her subsequent psychological development. Indeed, it is on the basis of the quality of the attachment relationship formed during their first year of life that "infants construct an internal working model of the attachment figure." Such a model consists of "a set of expectations concerning that person's availability and a complementary view of the self as worthy or unworthy of such care." However, at a time when most infants are cared for by several adults during their first year of life, the view of mother as the primary attachment figure may not be completely valid. In fact, it is possible that an infant builds a distinct working model for each caregiver he or she is exposed to. Nevertheless, it seems some developmental psychologists (Belsky, 1988, for example) continue to argue that the potential for a child's emotional adjustment is enhanced when he or she is separated from his or her mother during the first year of life. The authors contend that the negative effects of non-parental care on infants are not as dramatic as attachment theorists suggest. They substantiate this claim by referring to the fact that throughout the history of mankind, the majority of children in the world have received care from multiple caregivers and continue to do so.

The second set of theories discussed in this chapter is the sociobiological theories, which have attracted much attention in recent years. These theories are relevant to the issue of non-parental caregiving because they are based on the premise that people demonstrate favouritism and protective behaviour towards other who are genetically similar. Hence, biological relatives are

most likely to provide the best quality care for their children. The authors argue that it does not automatically follow from this line of argument that parents or other relatives are equipped to offer the best care. "Professional" caregivers, for example, because they have less invested in the child's future, may actually be more objective about the child's behaviour. These tendencies may balance or outweigh the advantages of parental or familial child care.

The third set of theories discussed in the chapter focus on the stimulation of children's cognitive and social development. Such theories were particularly popular in the United States in the 1960s. Moreover, they were the basis upon which the pre-school intervention movement, which included Project Head Start, was developed. Essentially, cognitive and social development theorists believe that the environment has a determining effect on child development. Therefore, if children receive non-parental care in "a materially and verbally stimulating daycare environment with a moderate number of children," they will have higher cognitive development and experience an easier transition into elementary school. These theories also maintain that interaction with peers beginning at an early age fosters social competence, thus favouring child care arrangements outside the family.

2.1.1.2 Keywords: "ecology" of centre-based and family daycare, theories of non-parental care, family daycare home, roles of non-parental caregivers, attachment figures, United States.

Background: This is a chapter in a handbook on parenting in which the role of the non-familial care provider as an important figure in the social networks of children is discussed. Three roles of non-parental caregivers are identified. According to the authors the caregiver is likely to occupy a place in the child's hierarchy of attachment figures. Also discussed are differences between caregivers and mothers.

Teacher roles: In daycare centres, caregivers tend to think of themselves as teachers and to use more academic teaching methods. In contrast, teaching in family daycare is more informal. Children learn through free exploration and in the context of "real-life" tasks and situations. Social rules are an important element of what caregivers in homes and in centres may teach children.

Disciplinarians: This role may be especially important in a setting populated by a large group of children who are close in age. Praise is one method through which caregivers try to discipline or manage children.

Nurturers and Attachment Figures: Daycare providers are natural candidates for attachment figures in the hierarchy of children's attachment as they spend significant portions of each day involved in caregiving and interacting with children. A growing body of research suggests that not only do children in daycare form attachment relationships with their caregivers, but that this has positive implications for children's development. Children who are rated as securely attached with their caregivers are more competent in their interactions with peers and adults.

Reported in the chapter is one study in which children who were insecure with both their mothers and their caregivers were rated lower in social competence than children who had at least one secure relationship. This suggests that a secure attachment with a daycare provider can compensate for an insecure relationship with the mother. Studies have consistently shown, however, that although children form attachments to their child care providers, they prefer their mothers to these other caregivers.

Caregivers versus Mothers: In terms of disciplinary styles, caregivers in daycare centres and nursery schools have been observed to be less authoritarian, less critical, and more likely to help and respond to children's initiation of play than mothers. Children also see their mother's role as being distinct from their caregiver's role: Mothers are perceived to be more involved in the children's physical care, whereas pre-school teachers are seen more as providing play and stimulation. Compared to teachers, home care providers interact more with each child individually, especially when there are only one or two children in the care arrangement, and they may be more positive and sensitive in their approach to children. They also do more supervisory disciplining. Compared to mothers, family daycare providers are more emotionally distant, engaging in less positive physical contact as well as being less playful and stimulating with the child.

2.1.1.3 Keywords: "ecology" of centre-based and family daycare, theories of non-parental care, family daycare home, attachment figures, United States.

Care in child's own home: The authors identify this type of care arrangement as quite distinct from other more formal kinds of daycare in that it allows the child "to remain in a familiar, secure place." It is also seen as most likely to give the parents an opportunity to monitor the behaviour of the caregiver. The caregiver in turn is able to provide each child with individual attention. According to the authors, if the in-home caregiver is related to the child, this is "the most

economical and stable of all daycare arrangements." If on the other hand, the caregiver is not a relative, this form of care is the least stable. Yet, if the caregiver is trained in child development, for example, a professional nanny, "in-home care is the most expensive kind of care."

Daycare home and family daycare home: Both of these terms refer to a care arrangement in which "a woman cares for a small group of children in her own home." The care provider "may or may not be related to the child; she/he may or may not be trained in early childhood education." Furthermore, "the number of children in the daycare home may range from 1 to 6 (family daycare home) or 6 to 12 (group daycare home)," and the basis of this arrangement "varies from an informal agreement about shared caregiving between friends to a formal, supervised network of licensed daycare homes." The authors examine a number of features of this type of care arrangement. Firstly, "daycare homes are usually located near the child's home, and therefore, they are easy to get to and are in a familiar neighbourhood where people are likely to share the parent's values and circumstances." Secondly, "the mother may have more control over what happens to her child in a daycare home than she would in a daycare centre because she can give instructions to a daycare home provider that she would not be able to give a daycare centre teacher." Thirdly, a daycare home provider is usually "flexible about taking children of different ages" and this form of care "offers the child an opportunity to interact with a handful of children of different ages rather than a large group of age-mates." Fourthly, the daycare home "provides new experiences for the child while at the same time providing continuity with the kind of family care the child is used to - in a home setting with a 'mother figure'." And finally, daycare homes are "unlikely to offer organized educational games or structured activities." Rather, the children spend most of their day in free play. In short, the main goal of most family daycare providers is to "provide a warm "homelike" atmosphere for the children."

Daycare centre: According to the authors, this is the most visible and easily identified child care arrangement; "the one most people think of when they speak of 'daycare'." The authors suggest "a centre may provide care for fewer than 15 children or more than 300" and "usually divides children into classes or groups according to their age." Furthermore, centres commonly have "some staff with training in child development and they offer children the chance to play with peers, often with educational materials." Compared with other daycare arrangements, centres are also considered "relatively stable and publicly accountable."

2.1.2 The NICHD Study of Early Child Care. The NICHD Early Child Care Research Network. http://www.nih.gov/nichd/html/publications.hmtl. Downloaded on October 14, 1998.

Keywords: National Institute of Child Health and Human Development, child care experiences, developmental outcomes, child care settings, United States.

Background: In 1991, the National Institute of Child Health and Human Development (NICHD), National Institute of Health, and U.S. Department of Health and Human Services, set out to develop a comprehensive, longitudinal study about the unique contribution that child care characteristics and experiences make to children's development - above and beyond the contributions made by the family and child characteristics.

Methods: A total of 1,364 children and their families from diverse economic and ethnic backgrounds in 10 locations across the United States were enrolled in the study. Children in the sample were being cared for in a wide variety of child care settings: care by fathers, other relatives, in-home caregivers, child care home providers, and centre-based care.

Independent variables: Many characteristics of the children (such as gender and temperament) and their environment were measured. Child care characteristics measured included the age of entry into care, quantity of care, stability of care, quality of care, and type of care; other aspects of child care, such as the provider's formal education, specialized training, child care experience, and beliefs about child rearing. The adult to child ratio, group size, physical environment and other safety and health characteristics were also measured.

Dependent variables: These included children's cognitive and language development, children's relationship with their mothers, and their self-control, compliance and problem behaviours, as well as peer relations and physical health. Children's cognitive development and school readiness were measured using standardized tests; language development was assessed through standardized tests and maternal reports.

Results: Close to half of the infants were cared for by a relative when they first entered care, but there was an acute shift towards reliance on child care centres and family daycare homes during the course of, as well as after, the first year of life. Economic factors accounted primarily for both the amount of non-parental care, the age of entry into care, and type and quality of care infants received. Family characteristics, including the family income and the mother's education, were strong predictors of children's outcomes – for both those children in nearly exclusive maternal

care, and those children in extensive non-parental child care. These findings suggest that the influence of families on children's development is not significantly reduced or changed by extensive non-parental care. Of the family characteristics, sensitivity of the mother was the strongest predictor of children's behaviour. Child care quality was the most consistent predictor of children's behaviour. Children in care receiving more sensitive and responsive attention had fewer caregiver-reported problems at age two and three.

The higher the quality of child care (more positive language stimulation and interaction between the child and provider), the greater the child's language abilities at 15, 24, and 36 months, the better the child's cognitive development at age two, and the more school readiness the child showed at age three. Among children in care for more than 10 hours per week, those in centre care, and to a lesser extent, those in child care homes, performed better on cognitive and language measures than children in other types of care (including exclusive care by the mother), when the quality of the caregiver-child interaction was taken into account.

Centre care is associated with better cognitive and language outcomes and a higher level of school readiness, as compared to outcomes in other settings with comparable quality of care. Group care resulted in fewer reports of problem behaviour at age three. Instability of care, as measured by the number of entries into new care arrangements, led to higher probability of insecure attachment in infancy if mothers were not providing sensitive and responsive care.

2.1.3 The Importance of Quality Child Care, Kohen, Dafna; Hertzman, Clyde. In J. Douglas Willms (ed.) *Vulnerable Children* (in press).

Keywords: Characteristics of quality child care, child care arrangements, disadvantaged children, children's linguistic, cognitive, and social outcomes, NLSCY data, provincial differences, regulated care, Canada.

Background: The term "daycare" is used in a general sense to cover various types of non-parental care. The authors identify the following types of non-parental care: Care in a regulated daycare centre; care in the home of a care provider which is regulated (regulated family daycare); care in the home of a care provider which is not regulated (unregulated family daycare); care in the child's home by a paid sitter or nanny; and other informal arrangements, such as care by a grand-parent or other relative.

Use of Child Care Arrangements: The sample consisted of children aged four and five years old who are cared for by someone other than their parents or guardians on a regular basis. Forty percent of Canadian children aged 4 and 5 spend part of their week in some type of care arrangement so that their parents can study or work outside the home. The majority of these children are cared for outside their home in an unregulated daycare (14.5%) or in a regulated daycare (12.2%). Unregulated care in the home by a non-relative (e.g., a baby-sitter or nanny) accounts for only 6.1% of these preschoolers (aged four and five) care arrangements, while 7.3% are cared for by a relative.

2.2 Quality of Care and Child Development

2.2.1 Using the NLSCY to Study the Effects of Child Care on Child Development, Final Report, Cleveland, Gordon; Douglas Hyatt. (1997). University of Toronto at Scarborough.

Keywords: process quality, NLSCY, quality indicators, survey research, "production process," Canada.

Background: The report commissioned by ARB examines the most relevant ways in which to use the NLSCY to study the effects of NPC on child development. It outlines a theoretical background to conceptualize the issue and discusses the main issues for measurement. It concludes with a section on specific recommendations for future cycles of the survey.

It suggests an input-output model through which to consider the impacts of NPC (inputs) on child development (outputs). During the "production process" inputs are transformed into outputs. When the authors use the concept of child care as an input they are referring to non-parental child care, whether parents are working or studying or doing neither. Decisions about child care inputs are made by governments, parents, and the growing child in the context of decisions about resources and investments (based on a model of family decision-making derived from Leiborwitz, 1974 and amended by Haveman and Wolfe, 1995. See article for full reference).

Independent variables: The authors list the following elements of NPC as having the potential to influence child outcomes: type of child care used; history of types of child care used; amount of use of non-parental care; structural measures of the quality of child care used; non-structural (process) measures of the quality of child care used; auspice of care used (i.e., non-profit, commercial, public); type of care or quality of care used at crucial ages or transition periods for the child; number of different non-parental caregivers in early years; consistency of expectations

among different caregivers in early years; consistency of expectations and attitudes among parents and caregivers in early years; and interactions of any of the above.

According to the authors the quality of non-parental child care is of crucial importance. However, it is insufficient to use structural measures of quality as a proxy for process quality in child care (there is reasonable evidence that the links between process quality and any other indicator of quality are not sufficiently well established). The standard "process" indicators in the U.S. for measuring centre-based child care are the *Early Childhood Environment Rating Scale* (ECERS) for children over 30 months and the *Infant-Toddler Environment Rating Scale* (ITERS) for children 30 months and under (see Harms and Clifford, 1980, 1990 for both). For family home child care, the Family Daycare Rating Scale (FDCRS; Harms and Clifford, 1989) is identified. The H.O.M.E. scale, the Belsky and Walker Spot Observation Checklist, and the Observational Record of the Caregiving Environment (ORCE) are the indexes which might be particularly relevant for the NLSCY, because they apparently are able to rate the quality of child care using a scale which is common to several different types of child care (e.g., both centre-based and home-based types of care).

Recommendations for the NLSCY: The authors conclude that it would be desirable to have on-site observations of child care quality occur several times over the pre-school life of each child. They recommend that this is the best way to assess "process" quality in current child care arrangements. If on-site observations are not possible then the authors recommend that parental (i.e. subjective) evaluation of child care quality should become the first priority amongst questions asked. The authors also recommend that additional data on child care inputs should be collected via additional questions in the parent questionnaire.

2.2.2 Non-Parental Caregiving. Clarke-Stewart, K. Alison; Allhusen, Virginia D.; Clements, Darlene C. In M.C. Bornstein (ed.) *Handbook of Parenting: Volume 3. Status and social conditions of parenting.* (1995). Mahwah, New Jersey: Lawrence Erlbaum Associates. p. 151-176

2.2.2.1 Keywords: "ecology" of centre-based and family daycare, theories of non-parental care, literature review, family daycare home, roles of non-parental caregivers, attachment figures, United States.

Background: This is a chapter in a handbook on parenting. The authors argue global indices of quality are not helpful for uncovering connections between children's development and specific

kinds of daycare experiences. More useful are those studies in which researchers examine the predictability of separate components of the daycare environment for separate developmental outcomes. The authors pay special attention to studying the caregiver "herself" - her behaviour or the factors that influence her behaviour.

Caregiver's behaviours: Studies clearly indicate that the caregiver's behaviour towards the child is a central mediator of the child's experience in non-parental care and, consequently, affects the child's development.

Caregivers' characteristics: Certain characteristics of the caregiver may each play a role in the way s/he interacts with the child. These characteristics include:

- Education and training: Many researchers have demonstrated a link between the level of education and/or training that a caregiver has received and his or her behaviour with the children in his or her care.
- Experience: Studies have shown that with fewer than 2 or 3 years of experience in child care there is a tendency for daycare providers to be passive and not initiate educational activities.
- Stability and consistency: Children who experience many changes in their child care arrangement (either because of caregiver turnover or because the parents change the arrangement) have been shown to perform poorly on intelligence tests, and to be less competent in their play with adults and peers. However, there may be a ceiling on the positive effects of caregiver stability: Beyond 3 or 4 years, there is no evidence that stability improves the quality of care. Caregiver stability is important not only because it is facilitates the formation of close relationships between children and their daycare providers, but also because stability is an indicator of good working conditions, adequate wages, and high staff morale.
- Degree of commitment to, or emotional investment in, the child: This is a factor to consider although there is no data to support the view that non-familial caregivers are less emotionally committed to the children under their care.
- Gender: Does the sex of the caregiver make a difference in children's experiences in child care? Very little research is available to help answer this question, primarily because the overwhelming majority of child care providers are women. Research shows that both mothers

and fathers tend to interact more with same-sex than with opposite-sex infants. Is this also true for non-parental caregivers? Studies that compare male and female caregivers are needed to answer the question of whether the caregiver's sex and the child's sex influence the quality of care that non-parental caregivers provide.

2.2.2.2 Keywords: "ecology" of centre-based and family daycare, theories of non-parental care, literature review, family daycare home, roles of non-parental caregivers, attachment figures, United States.

Background: In this chapter on non-parental caregiving the factors that influence caregiver behaviour are discussed.

Factors: Structural aspects of the caregiving environment and the inclusion of an educational curriculum in the program have been repeatedly shown to be important indicators of daycare quality. These include:

- Adult-Child Ratio and Group Size: In studies where the adult-child ratio is reduced, for example from 1:4 to 1:12, children have been found to experience less contact with the caregiver. This includes having "fewer of their questions answered, to engage in shorter conversations, and to be subject to more prohibitions."
- There is a suggestion that children in classes with a heterogeneous age mix behave more competently than those in homogeneous groups. The authors contend that in mixed-age pre-school classes, "children have been observed to exhibit fewer dominance activities (hitting, kicking, demanding objects), more language (asking questions, conversing, imitating), more co-operation (offering objects), more altruism, and to increase in persistence, flexibility, intelligence, and positive response to a stranger."
- Physical Environment: Several studies have revealed that children's behaviour and development are linked to aspects of the physical environment of the daycare setting. These may include "division of the classroom into interest areas and availability of varied, age-appropriate, and educational toys, materials, and equipment." According to the authors, however, simply adding "novel" materials to pre-school classrooms does not necessarily lead to cognitive or other gains.

- Educational Program: Studies of daycare have also shown that children in more educationally oriented daycare programs differ in developmental outcomes from those in less educationally oriented programs.

2.2.3 Assessing Quality in Child Care Setting. Doherty, Gillian. Spring (1998). Ottawa: Canadian Child Care Federation. http://www.cfc-cfc.ca/docs/00001225.htm. Downloaded on October 15, 1998.

Keywords: child care experience, non-parental care situation, "critical periods" of development, external variables, quality and forms of stimulation, neurology, parental characteristics, Canada.

Child care quality has traditionally been defined in terms of program inputs; for example, a relatively small number of children per adult, or a relatively high number of caregivers with training in childhood education. While these inputs do enhance the probability of creating "warm, supportive and stimulating interactions between child care providers and children," according to the author, they do not guarantee a quality experience for children. An alternative approach for evaluating quality according to the author is examining observational and neuro-biological research data in order to identify the type of experiences that are beneficial or potentially harmful for children. Discussed are the ideas of Begley (1996) and Kuhl (1997), two leading neurologists who begin their research with the premise that humans are born at a much earlier stage of individual development than the young of all other mammalian species. Of particular relevance to the issue of child development is their thesis that prior to the age of six a child needs specific "inputs" at "critical periods." If these "inputs" are not received, or are not received at the appropriate moment, development will not occur.

2.3 Effects of Non-Parental Care on Infants

2.3.1 Child Care in the First Year of Life. The NICHD Early Child Care Research Network. *Merrill-Palmer Quarterly*. (1997). Vol. 43, no. 3. p. 340-360

Keywords: non-maternal child care, infants, first year, descriptive statistics, child care histories, multiplicity and stability of care, United States.

Background: This article provides information on child care during the first 12 months of life, specifically, the initiation and amount of infant child care, child care history patterns, and the type, multiplicity, and stability of care used by parents of infants.

Methods: The data reported here were collected as part of the NICHD Study of Early Child Care - a prospective, multi-site study of the short- and long-term effects of infant care, conducted in the

1990s, based on a sample of families in which over half of the mothers indicated at birth that they planned to return to work full-time. Mothers were contacted in the hospital at the time of birth and recruited into the study when their infants were 1 month of age. A total of 1,364 families with healthy newborns were enrolled in the study. Data for the analyses presented in this article focus on the 1,089 children whose "non-maternal care" began before their first birthday. Mothers and their children were visited in their homes when the children were 1 month old. Mothers were administered a standardized interview containing questions about the household composition, child care, the family's health, and the education, employment history, and status of the family members, as well as a set of questionnaires. Families were subsequently telephoned when the infant was 3, 5, 9, and 12 months of age to update information about child care and family characteristics.

Variables used to profile child care:

- Use of child care: In interviews mothers were asked to indicate whether "anyone other than yourself is caring for [CHILD'S NAME] on a regular basis." Use of child care could be for any reason and for any number of hours as long as the infant was in the arrangement on a regular basis; occasional care was excluded. Care provided by fathers and partners was included if it was regularly scheduled when the mother was not present. Care provided by the mother herself was included as a child care arrangement when the mother provided care for the infant at her workplace; this included care, for example, by mothers who cared for their own infants while they worked as child care providers.
- Age at entry into care: The child's age (in months) at the time s/he first entered non-maternal care. Age of entry is reported for three groups: infants entering any child care, infants entering 10 or more hours of care, and infants entering 30 or more hours.
- Amount of care: At each assessment period, mothers reported the number of hours per week that their infant was cared for on a regular basis by someone other than themselves or by themselves while they were working.
- Type of care: Children's primary child care arrangements were classified into one of 10 categories: (1) mother at work, (2) father/partner, (3) grandparent in child's home, (4) grandparent in grandparent's home, (5) other relative in child's home, (6) other relative in the

relative's home, (7) non-relative in the child's home, (8) non-relative in a child care home, (9) child care centre, and (10) other (e.g. sibling care).

- History of care: Information provided by mothers on all starts and stops of specific types of child care arrangements since the previous interview. Children were divided into six unique history patterns: (1) exclusive maternal care through the first year of life, (2) some child care from the father or mother's partner, but no other non-maternal arrangement, (3) one continuous non-parental care arrangement, (4) one non-parental arrangement and then a return to exclusive maternal care, (5) more than one continuous child care arrangement, and (6) more than one arrangement with at least one termination.
- Multiplicity and stability of care: At each assessment, mothers were asked to report the number of arrangements (up to three) begun for the child and the number of arrangements (up to three) stopped since the previous interview. Two measures were created from these data (these reflect non-parental arrangements only): (1) multiplicity of care arrangements - the total number of arrangements used at entry into child care, and (2) stability of care - the total number of arrangements (simultaneous and sequential) used over the course of the first year of life.

Results: Excluding father/partner care, 72% of the infants experienced some non-maternal child care with an average age at entry of 3.31 months. At the time of first entry into non-maternal care, infants were in care on average for 29 hours per week. Excluding father care, the average hours of child care per week was 28.

For infants who entered into 10 or more hours of care per week, the average number of hours was 33, and for infants who entered into 30 or more hours per week, the number of average hours was 42. At entry, the most common forms of care were father/partner care (25%), care in a child care home by a non-relative (24%), and care by relatives, including grandparents, in either the child's or the relative's home (23%). Children in a child care centre (12%) or in-home care by a non-relative (12%) were less common. By 12 months of age, care by fathers/partners and grandparents had decreased and care in centres and in child care home had increased. Of those infants who experienced some non-parental care, 38% were enrolled in just one arrangement and, of these children, 32% had one arrangement and then returned to exclusive parental care. Of the

infants who experienced more than one non-parental arrangement, 93% experienced at least one termination of an arrangement. Over the course of the first year, infants who experienced non-parental care were in more than two such arrangements, on average; over a third (36.5%) had at least three different non-parental arrangements.

2.3.2 Non-Parental Caregiving, Clarke-Stewart, K. Alison; Allhusen, Virginia D.; Clements, Darlene C. In M.C. Bornstein (ed.) *Handbook of Parenting: Volume 3. Status and social conditions of parenting*. (1995). Mahwah, New Jersey: Lawrence Erlbaum Associates. p. 151-176

Keywords: "ecology" of centre-based and family daycare, theories of non-parental care, literature review, family daycare home, roles of non-parental caregivers, attachment figures, United States.

Background: This chapter in a parenting handbook highlights general conclusions reached by the authors on the developmental outcomes for infants with and without non-parental child care experiences.

Developmental outcomes: Researchers continue to come to grips with the question of whether or not early, extensive non-parental care leads to emotional insecurity and social maladjustment. In this chapter the authors express their skepticism about the argument that quality of the mother-child relationship is less secure for children of employed mothers than for children of non-employed mothers. Much of the evidence is based on experiments using the "Strange Situation." Yet, such an instrument seems highly inappropriate for assessing the attachment relationships of daycare children as these children have become accustomed to separations from their mothers. In other words, we do not know if "the avoidant behaviour observed in some of these children is truly reflective of insecurity or if it represents an adaptation by daycare infants toward greater independence and ease with infant-mother separation." According to the authors, an alternative method, which involves rating children's behaviour with their mothers at home after observing a substantial period of unstructured, natural interaction has not revealed significant differences between children with extensive, early daycare experience and those without. The authors argue that the quality of the specific caregiving arrangements experienced by the individual child as well as other influential environmental factors in the child's ecology must be taken into account.

2.3.3 Early Child Care and Self-Control, Compliance, and Problem Behavior at Twenty Four and Thirty Six Months, The NICHD Early Child Care Research Network, *Child Development*. (1998). Vol. 69, no. 4. p. 1145-1170

Keywords: interviews, observations of child care setting, quality-of-care measures, "selection effects," non-compliance, problem-type behaviour, developmental transitions, group-type care, stability of care, "sleeper effects," United States.

Background: Early child care experience continues to be linked with increased levels of non-compliance, aggression, and problem behaviour. Although evidence suggests quality of care must also be considered, it has thus far not been studied. The current investigation was designed to examine the multiple features of care, including quality. The authors studied whether or not child care experiences in the first years of life (e.g., quantity, quality, stability) predict self-control, compliance, and problem behaviour at 24 and 36 months of age and whether child and family factors moderate these effects.

Methods: More than 1,000 children with diverse child care and family experiences were repeatedly monitored in this study. Child care data were obtained from mothers' reports during face-to-face interviews at 1, 6, 15, 24, and 36 months, as well as from phone calls every 3 months beginning at 3 months of age. Observations of the non-maternal care site and interviews with caregivers were conducted when the child was 6, 15, 24, and 36 months of age. At 24 and 36 months of age, child behaviour was observed both in a natural setting and in a laboratory.

Independent variables: (a) family and child variables including gender, child temperament, positive qualities of maternal behaviour and infant-mother attachment security ("Strange Situation" measured at 15 months); and (b) child care variables, including (1) age of entry, (2) quantity of care, (3) stability of care, (4) group-type, (5) quality of care. Child's age in weeks, when reported non-maternal child care experiences totaled at least 10 hours per week; Sum of all hours in all non-maternal arrangements, scored as mean hours per week during the period 4-15 months (first year), 16-24 months (second year), and 25-36 months (third year); Number of different child care arrangements the child experienced as reported by the mother during the same three age periods described above; Child's primary non-maternal care arrangement (where the child spent the most time, or the more formal, institutional arrangement if time across settings was equal) at each of four ages (6, 15, 24, and 36 months). Children were considered to be in group-type care if there were at least three other (non-sibling) children in addition to the study child in the child care arrangement; An instrument using observational data designed specifically for this study but based on the ORCE (see NICHD Early Child Care Network, 1996) was used.

Dependent variables: Child functioning assessment (at 24 and 36 months) obtained from (1) mother and caregiver reports of child's problem behaviour and social competence; (2) laboratory assessments; and (3) child care observations. (1) The Child Behaviour Checklist 2/3 was used to assess behaviour problems. The Adaptive Social Behaviour Inventory was used to measure social competence and disruptive behaviour. (2) Instruments used in the laboratory included The Cleanup Task, Compliance with Bayley Test Examiner, Resistance to Temptation, and the Three Boxes Interaction Procedure. (3) Child functioning was measured using the modified ORCE.

Results: The full set of child care predictors never accounted for more than 3% of the variance in the measures of self-control, compliance, and behaviour problems. In fact, they accounted for even less when family processes reflecting attachment security and sensitive mothering were controlled. It remains possible that larger effects may emerge if specific variables were examined (e.g., impoverished children, single-parent homes, depressed mothers). Among child care variables, quality of care remained the most consistent predictor at both 2 and 3 years of age. But, even though quality of care proved to be the most consistent of the child care variables in predicting children's compliance and problem behaviour, the amount of explained variance was modest, and standardized regression coefficients never exceeded 0.16 in the cumulative-experience analyses or 0.13 in the lagged-and-concurrent-analyses. Moreover, all but two of the six significant effects of cumulative quality of care were reduced to non-significance once family variables were controlled.

Although 2-year-olds who spent more time in non-maternal care were reported by their mothers to be less co-operative, and by their caregivers to exhibit more behaviour problems (after controlling for selection effects and child characteristics), by the time they were 3 years of age, no significant effects for amount of child care experience could be detected. Authors argue it is plausible that the effects could re-emerge when children are challenged by another developmental transition, such as the entrance to school. It is however, also possible that as child development is a very complex process, it is not explained sufficiently by the study variables.

The composite measure of sensitive mothering[3] in this study proved to be relatively strong in predicting child outcomes. Significant standardized regression coefficients for this predictor ranged from an absolute value of 0.20 to an absolute value of 0.36 in the cumulative-experience analyses. Consistent with evidence from other studies, these results indicate that more responsive and positive mothering in the first 2 years predicted fewer mother-reported problems and more positive interaction between mother and child in the laboratory at 24 months.

2.3.4 Environmental Changes and Children's Competencies, Kohen, Dafna; Hertzman, Clyde; Wiens, Michele. Applied Research Branch, Human Resources Development Canada. Working Paper W-98-25E, 1998.

Keywords: NLSCY, child care, environmental changes (residential moves, changes in schools, child care arrangements), child outcomes.

Background: Environmental changes are common in the lives of Canadian children. Authors in this study examine the impact of residential moves, and changes in child care arrangements and schools on the outcomes of children aged 0-11 (thus extending the applicability of this entry beyond simply an examination of infant outcomes). This summary will focus only on the outcomes related to changes in child care arrangements.

Independent variables: Family socio-demographic characteristics, Mental Health of the Person Most Knowledgeable (PMK) about the Child.

Dependent variables: *Infants/Toddlers (0-3 years)* – Motor Social Development (15 questions measuring dimensions of motor, social, and cognitive development); temperament (Infant Characteristics Questionnaire Revised). *Preschoolers (4-5 years)* – verbal competence (PPVT-R); behavioural problems (43 item checklist). School ages (6-11 years) – behavioural problems, math achievement (Mathematics Computation Test of the Standardized Achievement Tests, Second Edition (CAT/2); grade repetition.

Results: In the 12 months before the survey 23% of infants and toddlers had experienced a change in care arrangements, most often because the program had terminated (33%) or because the PMK was dissatisfied with the care arrangement (20%). Mothers of children who had experienced changes in care arrangements were more likely to have reported poorer mental health

[3] The sensitive mothering variable is a combination of two measures. The mothers' behaviours in a videotaped interaction between her and her child at home or in the lab, and the mother's behaviour as assessed by HOME (Home Observation for Measurement of the Environment) at 6, 15 and 36 months.

and the children were more likely to be male. These children were also more likely to be characterized as having a difficult temperament. For preschool age children, 25% of the 41% who were in care had experienced a change in care arrangements over the past year. The reasons for the change were similar to those seen in the younger children. The mothers of these children were more likely to have higher educational levels, lower household incomes, and poorer mental health. Even after controlling for socio-demographic characteristics, children who had experienced a change had lower PPVT scores than those who did not. Twenty two percent of school age children had experienced a change in care arrangements, most often because of termination of program availability (31%) or a family move (16%). These mothers were more apt to be single parents, have higher educational attainments, and poorer mental health and their children were more likely to be male. Children in this age group who had experienced a child care change had 30% higher odds of having high behavioural problem scores than those who had not. These results substantiate the importance of stability in child care.

2.4 Effects of Non-Parental Care on Preschoolers

2.4.1 Effects of Age of Entry, Daycare Quality, and Family Characteristics on Preschool Behavior, Hausfather, Albert; Toharia, Angeles; LaRoche Catherine; Engelsmann, Frank. *Journal of Child Psychology and Psychriatry*. (1997). Vol. 38, no. 4. p. 441-48

Keywords: Child daycare, daycare quality, child behaviour, outcomes, high-quality care, "interactive effects," age of entry, Canada (Montreal).

Background: In 1990, Howes, *et al.* discovered that there were important interactive effects between age of entry and daycare quality: Children who entered low quality daycare as infants were the least compliant and least likely to self-regulate. Yet, these and other authors have never included daycare centres of excellent quality in their research and therefore, have been unable to evaluate the differential effects of extremes in quality. This article tests the hypothesis that the quality of the daycare program is the main determinant of risk or benefit of attending non-parental care from an early age.

Methods: A cross-sectional design was developed, which included an assessment of the present daycare centre quality as well as a detailed history of the child's daycare experiences from birth. Only centre-based group daycare was studied because it is the child care environment most suitable for a standard evaluation. All 66 licensed daycare centres receiving infants for at least the

past 5 years in the Montreal area were initially contacted. Of the 66 licensed daycare centres receiving infants, 24 agreed to participate. In addition a questionnaire was given to parents

Independent variables: (a) family characteristics; (b) age of entry into child care; and (c) quality of child care. Quality of care was evaluated by two independent raters using two direct observation assessment scales: the Early Childhood Environment Rating Scale (ECERS, Harms and Clifford, 1980), and the Early Childhood Classroom Observation Scale (ECCSO, Bredekamp, 1987). The purpose of the second scale was to enrich the assessment of some specific dimensions of quality care such as the relationship between the child and caregivers and nature of the program, and to assess further the validity of the ECERS.

Life events inventory: A life events inventory was completed by the parents (see the Life Events Questionnaire adapted from the questionnaire by Coddington, 1972). Parenting stress (see the Parenting Stress Index, PSI-short form; Abidin, 1990). Family Evaluation (Parental feelings, perceptions and the family mode of functioning with regard to two basic dimensions; its adaptability and its cohesion, were measured using the Family Adaptability and Cohesion Evaluation Scale, FACES-II, abbreviated form; Olson, Russell & Sprenkle, 1989).

Dependent variables: Pre-school behaviour: Daycare teachers, unaware of the hypotheses of the research evaluated the 155 4-5 year-old children attending the Montreal daycare centres on the Social Competence Scale (SCS, Kohn and Rosman, 1973) and the Pre-school Behaviour Checklist (PBC, McGuire and Richman, 1986).

Results: The positive or negative effects of age of entry to daycare on the child's later group behaviour are significantly mediated by the daycare quality. In other words, an early age of entry into group daycare should not, in itself, be considered a risk factor. Early entry into group daycare may have detrimental or beneficial effects, depending on the centre quality conditions and the family background of the child. A longer stay in low quality daycare contributes significantly to the child's display of anger and defiance in the group setting. In high-quality care, early and longer attendance, combined with favourable family circumstances are predictors of the child's level of interest and participation in the group setting. The possible negative effects of an early group experience (angry behaviour in children) and of family stress may be sufficiently buffered when excellent-quality daycare is provided to the child.

2.4.2 Effects of Daycare on the Development of Cognitive Abilities in 8-Year-Olds: A Longitudinal Study, Broberg, Anders G; Hwang, C. Philip; Lamb, Michael E; Wessels, Holger. *Developmental Psychology*. (1997). Vol. 33, no. 1. p. 62-69

Keywords: child characteristics, cognitive abilities, quality of home care, quality of alternative care, "sleeper effects," Sweden (Goteborg).

Background: The impact of child care on child development is difficult to quantify when the samples are not randomly selected and thus pre-existing differences between children may be present in different child care trajectories. This study was designed to avoid this problem by recruiting children between 12 and 24 months of age before they were launched on different child care trajectories and by following them over a period of 7 years. The study was conducted in Goteborg, Sweden and 146 children (72 girls) were enrolled when they averaged 16 months of age. None of the children had experienced regular out-of-home care at the time of enrolment, but within 3 months, 54 entered centre care and 33 entered family daycare. According to the authors, evidence of the effects of daycare quality on children's cognitive abilities (except Clarke-Stewart's 1991 study of the links between verbal abilities and quality) is quite inconclusive.

Methods: The authors recruited 146 children from the waiting lists for public child care facilities in all areas of Goteborg, in 1982 and 1983. Children were included in the study if they were (a) between 12 and 24 months old, (b) firstborn, or at least not living with a sibling under 12 years of age, (c) living with both parents (married or unmarried), and (d) not attending regular daycare. Because of a shortage of places, not all children were assigned to public child care facilities. Fifty-four of the children were enrolled in public daycare centres (centre daycare or CDC group), 33 entered family daycare (FDC group) setting (8 public and 25 private), and 59 children remained in the exclusive care of their parents (home care or HC group). The authors assessed the effects of early child care arrangements with measures of the type, amount, and quality of out-of-home care. After the initial assessment, children were followed for seven years through four additional phases of data collection that took place when they averaged 28, 40, 80, and 101 months of age.

Independent variables: (a) child characteristics, including gender, temperament, number of siblings, and prior cognitive abilities (hypothesized to be the most powerful predictors of later cognitive skills); (b) family background variables including, socio-economic status, quality of the home environment, and the extent of paternal involvement; and (c) quality of non-parental care.

(a) Temperament was measured as inhibition. In Phase III, when children averaged 40 months of age, mother's ratings of eight items from Block and Block's (1980) California Child Q-Sort and observers' ratings of the children's lack of sociability with a strange adult and lack of involvement in a peer-play situation were combined into an index of inhibition. Inhibition was also measured by pre-school teacher's ratings in Phases III and IV on seven items from Baumrind's (1968) Pre-school Behavior Q-Sort. In order to measure the number of siblings, in phases II, III, IV, and V, the authors coded whether siblings had been born since their last visit. (b) Paternal involvement in all phases was assessed using ratings by the parents on the Parental Responsibility Questionnaire (PRQ; Lamb, *et al.*, 1988). Child's time in daycare was indexed by the total number of months (whether full time or part time) he or she had spent in (1) centre-based daycare; (2) family-based daycare; and (3) exclusive home care up to and including Phase III. Quality of home environment was measured using age-appropriate versions of Caldwell's HOME Inventory (Caldwell, 1970; Caldwell & Bradley, 1984). During the individual phases, full or sub-scales of the infant, the pre-school, or the full elementary school version of HOME were used. The Belsky and Walker (1980) Spot Observation Checklist was also used in the first three phases to measure the quality of home care. (c) Quality of non-parental care: Both structural and dynamic measures were used. Structural aspects were assessed with information obtained in a short interview with caregivers regarding the number of children in the group, the number of caregivers, the average number of hours the target child spent in out-of-home care each day, the "longest" regular day the child spent in daycare, and the total number of caregivers who had been working in the group within the last 12 months. This information was then combined into an index and a summary measure for the early childhood period was constructed by averaging scores from the assessments at 16, 28, and 40 months. To tap dynamic aspects of the alternative care setting, the Belsky and Walker (1980) Spot Observation Checklist was also used in the first three phases of data collection. Scores from the first three assessments were then summed for analytic purposes.

Dependent variables: (a) Verbal abilities and (b) mathematical abilities. In phases II, III, and IV, verbal ability was assessed using objective tests. In Phases II and III, the Language sub-scale of the Griffiths Developmental Studies (Griffiths, 1954, 1970) was used. Two verbal sub-scales (reading and vocabulary) of a Standardized School Readiness Test (Ljungblad, 1967/1989) were administered individually to children prior to their entry into elementary school. When the

children were in second grade, a standardized test of reading abilities was used. To measure mathematical abilities, the numerical sub-scales of the Standardized School Readiness Test (Ljungblad, 1967/1989) were administered individually to the children prior to their entry into elementary school. The sub-scale scores were summed to yield total mathematical ability scores. When the children were in second grade, a standardized test of mathematical ability was used (Ljung & Pettersson, 1990).

Results: To identify those variables that explained measurable amounts of variance in cognitive ability, a stepwise regression analysis was conducted. The tested verbal and mathematical abilities at 101 months of age were used as the dependent variables. Findings indicated: Earlier measures of cognitive ability were the best predictors of cognitive performance at 8 years of age. The type of early child care experienced proved to be predictive as well. Daycare had positive "sleeper effects" on cognitive development. Children who had spent more months in centre-based daycare before they were 40 months old obtained higher scores on tests of cognitive ability than did other children. For children who had spent 3 or more pre-school years in out-of-home care, quality of non-parental care was also predictive. Dynamic measures of quality (quality of adult-child interaction) predicted verbal abilities, whereas structural measures of quality (child-staff ratio, group size, age, and range) predicted mathematical ability. Family socio-economic status did not predict performance. Part of the reason for this may be that socio-economic status is of less predictive importance in Sweden than in other countries.

2.4.3 Daycare Participation as Protective Factor in the Cognitive Development of Low-Income Children, Caughy, Margaret O'Brien; DiPietro, Janet A; Strobino, Donna M. *Child Development.* (1994). Vol. 65. p. 457- 471

Keywords: protective factors, disadvantaged children, low-income children, daycare participation, reduced risk, United States.

Background: Existing knowledge about the impact of daycare on the cognitive functioning of disadvantaged children has come primarily from studies of centre-based programs, designed specifically to foster cognitive development. These centre-based programs, made up of special enrichment curricula, do not represent the child care experience of most disadvantaged children. The goal of the authors here is to study the impact that enrolment in ordinary/routine child care during the first 3 years of life has on a child's cognitive development. The authors test a model

proposed by Dasai, *et al.* (1989) in which the impact of daycare participation varies with family income.

Methods: The authors conduct a secondary analysis of The National Longitudinal Survey of Youth (NLSY), a national American data set that includes a national probability sample of over 12,000 young men and women between the ages of 14 and 21. The original purpose of the NLSY was to analyze the labour market participation of this sample of young adults. In 1982, however, the NLSY received additional support to allow for data collection on the children of women in the NLSY sample, and in 1986, the NLSY completed in-home assessments of almost 5,000 children to measure social, behavioural, and cognitive functioning. Data were collected from a variety of sources, including maternal reports, interviewer observation, and direct assessments of the child using quality control procedures. The NLSY continues to evaluate the children every 2 years, and in 1990 the total number of children assessed exceeded 8,000. The sample used in this article consists of 867 5- and 6-year-old children who completed the 1986 assessment wave of the NLSY.

Dependent variables: (a) Daycare participation and (b) quality of the home environment. Information about daycare participation was derived from interviews with mothers. As a part of the NLSY cohort, mothers were interviewed yearly beginning in 1979. Information routinely collected as part of the interview included household composition, income, education, and employment status. In the annual 1986 interview, mothers were also questioned regarding daycare participation. The daycare participation variable was constructed from three binary variables about whether or not the child was enrolled in daycare during the first 3 years of life. These variables were used to create two additional variables reflecting the pattern of daycare use: the total number of years during the first 3 years of life that the child participated in daycare, and the year daycare began. In addition to this information, the predominant daycare arrangement was reported for each of the first 3 years of life and was categorized as (1) in the child's own home, (2) in another home, or (3) daycare centre/school. Quality was assessed using a shortened version of the HOME scale (Bradley & Caldwell, 1979). The internal consistency of the HOME-SF was assessed and the Cronbach's alpha was 0.67 for 5-year-olds and 0.70 for 6-year-olds.

Dependent variables: Academic Readiness. Academic readiness was measured by the 1970 version of the Peabody Individual Achievement Test (PIAT). Three of the PIAT sub-tests (mathematics, reading recognition, and reading comprehension) were administered.

Results: The first set of analyses tested the effect of daycare participation and its interaction with family income on cognitive outcome using an analysis of variance (ANOVA). In the second set of analyses, multiple linear regression was used to investigate the relation between patterns of daycare participation and outcome, controlling for confounding variables..

Children from impoverished environments who started attending daycare before their first birthday had higher reading recognition scores than children from comparable home environments who did not attend daycare at all.

Daycare participation during the first 3 years of life is positively related to the subsequent development of mathematics and reading skills for children from impoverished environments. This relation is strongest for reading skills if participation commences before the child's second birthday. For mathematics skills, it appears that centre-based care, in particular, exerts a protective effect over the developmental liabilities of an impoverished environment.

Some adverse effects of daycare attendance were also detected. For children from homes at the upper end of the HOME-SF scale, initiation of daycare before the second birthday was negatively associated with reading recognition performance, and participation in daycare that was centre-based or in the child's own home was negatively associated with mathematics performance.

Interestingly, the correlation between the HOME-SF score and family income was modest, at best. Family income can influence the quality of the home environment directly by influencing the resources available to the family for the purchase of items that are assessed as part of the HOME-SF. However the HOME-SF also measures other aspects of the home environment, for example, maternal responsiveness and affection toward the child.

Limitations: The daycare variables used in this study were limited to maternal recall of participation during the first 3 years for those children who were 5-6 years old in 1986. In addition, the NLSY did not include information regarding the number of hours per week spent in daycare or the staffing patterns and qualifications of the daycare providers.

2.4.4 Child-Care History and Kindergarten Adjustment, Bates, John E.; Marvinney, Denny; Kelly, Timothy; Dodge, Kenneth A.; Bennett, David S.; Pettit, Gregory S. *Developmental Psychology*. (1994). Vol. 30, no. 5. p. 690-700

Keywords: extensiveness of non-parental care, child characteristics, child adjustment problems, behavioral development, child care histories, United States (Nashville, Tennessee; Knoxville, Tennessee; Bloomington, Indiana).

Background: This three-site longitudinal study, conducted over a two-year period examines the controversial issue of the timing and the extensiveness of non-parental care as it attempts to understand the origins of aggressive behaviour in children and kindergarten adjustment. The authors argue that the developmental stage of the child is a key factor if he/she experiences daycare. According to the authors, what are needed are studies that distinguish the timing of care as opposed to the total amount of care received up to the time that adjustment outcomes were measured. Since the authors were able to consider the full array of daycare histories, rather than only children who started a particular arrangement and continued for some specified time, they were able to disentangle the effects of timing and total amount of daycare.

Methods: 589 families of 5-year-old children who were about the enter kindergarten in Nashville, Tennessee (n = 204), Knoxville, Tennessee (n = 204) and Bloomington, Indiana (n = 181) were recruited. Of the families approached, 75% agreed to participate. In the summer before kindergarten or within the first weeks of school, parents were separately given questionnaires and were interviewed for 1.5 hours at home. Although mothers' interview data was central to analyses, in 388 of the cases, fathers' interview data were available for comparison. Children were given a social-cognitive interview during this same period. Children were followed up after they had been in kindergarten 3 months or more and assessed with teacher, peer, and observer measures of social adjustment in school. The 588 children followed (one family dropped out after initial assessment) were in 145 classrooms in 14 different schools.

Independent variables: Daycare use: Daycare was measured retrospectively. While this method merits some caution, measurement was antecedent to the child's experience in kindergarten, so it cannot be asserted that kindergarten adjustment biased parents' recollections of daycare. Furthermore, on the basis of Vandell and Corasaniti's (1990) validity studies, it appears that mother's retrospective reports of roughly defined amounts of daycare do tend to be accurate. Yarrow, Campbell, and Burton (1970) had similar findings.

Dependent variables: Social-cognitive measures: Negative adjustment (based on teacher, peer, and observer composites); teacher-reported aggression (from the Teacher's Report Form; Achenbach and Edelbrock, 1986), plus reactive and proactive aggression from the Teacher Checklist (Coie and Dodge, 1988); peer-rated aggression (see Coie, Dodge, and Coppotelli, 1982); observer-rated aggression; and positive adjustment (teacher positive peer relations, peer popular/skilled).

Results: After controlling for SES, family stress, family structure, and marital quality, children who spent more time in child care during their first 5 years scored lower on a composite measure of positive adjustment (i.e., peer popularity or teacher-rated peer competence) and higher on a composite measure of maladjustment (i.e., teacher-rated behaviour problems, peer-rated aggression, peer dislike, or observed aggression) than children with less child care experience.

Even though child care experience in the first year of life did not predict behavioural maladjustment when child care experience in the second through fifth year was controlled, analyses did reveal that extensive care in the first year, coupled with extensive care thereafter, was associated with increased problematic functioning in kindergarten.

Limitations: Authors were not in a position to evaluate the role played by quality of care and assumed that the average level of care was below the high-quality centres reported in most studies.

2.4.5 Vulnerable Children: The Importance of Quality Child Care, Kohen, Dafna; Hertzman, Clyde. In J. Douglas Willms (ed.), *Vulnerable Children* (in press).

Keywords: Characteristics of quality child care, child care arrangements, disadvantaged children, children's linguistic, cognitive, and social outcomes, NLSCY data, regulated care, provincial differences, preschoolers, Canada.

Background: This paper examines whether children's competencies (social and cognitive skills) differ across types of care arrangements, before and after adjusting for family structure and parents' socioeconomic status.

Methods: Three sets of secondary analyses are conducted on data from the NLSCY, a nationally representative longitudinal study of children and youth in Canada. The sample for the first two analyses was limited to children aged 4 and 5 since this was the group whose developmental assessments were available. The third analysis, concerned with the feasibility of providing

regulated child care to all families with incomes below $35,000 for their children from birth to age 5.

Independent variables: Type(s) of care arrangements. This variable was coded as either regulated daycare, which is usually given in a regulated daycare centre, but may also include regulated family daycare; unregulated care in the home by a sitter or nanny; unregulated care outside the home, such as family daycare; and care by a relative, either inside or outside the home.

Dependent variables: Three measures of competency were used: Prosocial behaviour, the presence of a behaviour disorder, and PPVT-R scores (Pre-school vocabulary).

Results: In the case of children from low-income families, those who participate in care arrangements outside the home, either regulated or unregulated, have superior vocabulary skills to those who are cared for at home by a relative or those who use no care arrangements at all. The differences are substantial: for families with incomes of $15,000, the difference between children who participate in child care and those who do not is about 4 points on the PPVT-R test. Less than one-half of Canadian 4-year old children from low-income families attend a regulated daycare or pre-kindergarten program despite the potential benefits to development..

2.4.6 Non-Parental Caregiving. Clarke-Stewart, K. Alison; Allhusen, Virginia D.; Clements, Darlene C. In M.C. Bornstein (ed.) *Handbook of Parenting: Volume 3. Status and Social Conditions of Parenting.* (1995). Mahwah, New Jersey: Lawrence Erlbaum Associates. p. 151-176

Keywords: "ecology" of centre-based and family daycare, theories of non-parental care, literature review, family daycare home, roles of non-parental caregivers, attachment figures, United States.

Background: Presented are conclusions derived from studies on the developmental outcomes for preschoolers with and without non-parental care experiences.

Summary: With respect to cognitive development, there is a substantial body of research suggesting that the children who attend relatively high-quality daycare centres or early childhood programs perform better on cognitive tests than children from comparable family backgrounds who do not. This outcome is usually not observed for children in daycare homes or with in-home caregivers. In fact, on various measures of intellectual development, children in family daycare or in-home care perform at levels similar to children at home with their mothers.

Since differences between children in daycare centres and daycare homes are less when the daycare homes are of high quality, it would appear that the quality of care is more important than the type of care. For example, in one study reported by the authors in this chapter, although the language competence of children in unlicensed daycare homes was found to be inferior to that of children in centres, the language competence of children in regulated homes was equivalent (Goelman and Pence, 1987). In another study, when care in daycare homes was enriched by the experimental addition of an educational curriculum, the intellectual performance of the children was observed to improve to the level of children in daycare centres (Goodman & Andrews, 1981).

Children who attend daycare programs have also been shown to be different from children without non-parental care experience in their social behaviour. Compared with children without non-parental care experience, children with such experience are more "self-confident, outgoing, assertive, verbally expressive, self-sufficient, and comfortable, and less distressed, timid, and fearful in new situations." The authors argue they are also more independent from their mothers and exhibit more social skills. On the negative side, along with independence there may exist a lack of politeness and compliance with mothers' and caregivers' requests. The authors point out that one of the reasons for the different outcomes for cognitive and social development may be that few child care educational programs emphasize teaching children social rules. The authors define social rules as "effective ways of solving social problems." An alternative, though highly suspect argument is that "these aggressive children are acting out the emotional maladjustment they have suffered as a consequence of having formed an insecure attachment to their mothers earlier on."

2.4.7 Relations Between Preschool Children's Child-Care Experiences and Concurrent Development: The Cost, Quality, and Outcomes Study, Peisner-Feinberge, Ellen S.; Burchinal, Margaret R. *Merrill-Palmer Quarterly*. (1997). Vol. 43, no. 3. p. 451-477

Keywords: child care centres, quality of care assessments, children's cognitive and socio-emotional outcomes, children with at risk backgrounds, United States.

Background: This study was designed to test whether child and family characteristics moderate the relation between child care quality and pre-school children's outcomes with a large sample of community child care centres and children from diverse family backgrounds.

Methods: This article is based on data gathered during the first year (1993) of the Cost, Quality, and Outcomes Project (CQOP), a study which was designed to examine the relations among child

care costs, quality, and longitudinal outcomes for children in full-time care in community child care centres. Sampling for the CQOP was conducted in four stages. First, child care centres and then classrooms within centres were selected. Next, a sub-sample of pre-school classrooms was chosen. And finally, children and families were selected from this sub-sample. These procedures yielded 757 (52% boys) children averaging 4.3 years of age. Data collection took place in two phases, with child care quality measured first, and child outcome data gathered from children, teachers, parents second.

Independent variables: (a) child and family characteristics, and (b) child care classroom quality. Demographic information was obtained from parent surveys. Each classroom was observed for approximately 3 to 4 hours in a single visit and four observational measures were used: (1) classroom environment was measured using the Early Childhood Environment Rating Scale; (2) teacher sensitivity was measured with the Caregiver Interaction Scale; (3) child-centredness was assessed by the UCLA Early Childhood Observation Form; and (4) teacher responsiveness was measured with the Adult Involvement Scale.

Dependent variables: Child's cognitive and socio-emotional developmental status. Data were gathered from (a) individual assessments and (b) teacher ratings. Receptive language comprehension/ability was measured using the Peabody Picture Vocabulary Test-Revised (PPVT-R; Dunn & Dunn, 1981); pre-academic skills were assessed using the Woodcock-Johnson Tests of Achievement-Revised (WJ-R; Woodcock & Johnson, 1990); and children's self-perceptions of competence and attitudes toward child care were measured by the Attitudes/Perceptions of Competence (Stipek, 1993). The Classroom Behaviour Inventory (CBI; Schaefer, Edgerton, & Aaronson, 1978), and Student-Teacher Relationship Scale (STRS; Pianta, 1992) were also used.

Results: After adjusting for child and family characteristics, the two child care quality variables were both jointly and individually related to better PPVT-R language scores.

The teacher's rating of closeness with the child was not significantly related to receptive language, whereas the observed quality index was positively associated with better receptive language skills as measured by PPVT-R. Neither child care measure was significantly related to pre-math skills. Only closer teacher-child relationships were associated with higher ratings of cognitive/attention skills. Fewer behaviour problems were associated with closer teacher-child relationships and,

modestly associated with lower observed quality. Whereas better quality care had a positive influence on cognitive and socio-emotional outcomes for children, in several instances higher quality care had an even stronger positive influence for children from less advantaged backgrounds. There was no evidence that children from more advantaged backgrounds are buffered from the potentially harmful effects of poor quality care by the influences of the family. Quality of care affects the developmental outcomes of children from all backgrounds. Although the authors found significant relations between child care quality and all the child outcomes studied after controlling for background factors, the associations were modest. The strongest finding was in the area of children's language development.

2.5 Effects of After-School Care on Child Development

2.5.1 Patterns of After-School Care in Middle Childhood: Risk Factors and Developmental Outcomes, Pettit, Gregory S.; Laird, Robert S; Bates, John E.; Dodge Kenneth A. *Merrill-Palmer Quarterly*. (1997). Vol. 43, no.3. p. 515-38

Keywords: after-school care (ASC), self-care, types of care, care-outcome linkage, social competence, behavioural and academic adjustment, adult-supervised activity-oriented (A-O) care, United States.

Background: Most studies that have compared children's developmental outcomes on the basis of after-school care (ASC) arrangements have construed ASC exclusively as a single type. It seems likely however, that most school-aged children are involved in a variety of care arrangements throughout a typical week. This study seeks to capture more fully the range of ASC experiences common among school-aged children by evaluating longitudinally the impact of patterns of ASC on children's behaviour problems, social skills, and academic performance. *Patterns* here refer to (a) the extent of usual weekly involvement in different ASC arrangements, (b) combinations of arrangements occurring with some regularity, and (c) overall number of ASC arrangements used.

Methods: This study was completed as part of the ongoing Child Development Project, a multi-site longitudinal study of children's social adaptation. Participating families were recruited in two cohorts (1987 and 1988) from each of the three sites: Nashville and Knoxville, Tennessee, and Bloomington, Indiana. The sample consisted of 585 families at the first assessment prior to kindergarten. Follow-up assessments of the children were conducted in kindergarten and every

grade thereafter through Grade 6; follow-up family assessments (via parent questionnaires) were conducted in the summer following kindergarten and in all subsequent summers.

Independent variables: (a) children's involvement in differing types of ASC in Grades 1, 3, and 5, (b) family SES, (c) child sex, and (d) kindergarten adjustment. ASC data were derived from guided recall in-home interviews conducted with mothers in the summer between the children's fifth-and sixth-grade school years. Out-of-school care arrangements were classified into eleven types.

Dependent variables: (a) behavioural problems, (b) social competence in peer relations, and (c) academic performance in Grade 6 (measured by grade point average and by standardized test scores).

Results: Mothers reported that their children spent an average of 8.7 hours (SD = 8.2) per week in non-parental care in first grade, 9.8 hours (SD = 8.7) in third grade, and 10.6 hours (SD = 8.5) in fifth grade. The overall complexity of non-parental care increased across grades, from a mean of 1.3 (SD = .09) arrangements in Grade 1, to 1.6 (SD = 1.0) in Grade 3, to 1.8 (SD = 1.0) in Grade 5 (all t test comparisons $p < .001$). Amount of self-care, as a factor by itself, and in interaction with SES, was associated with later adjustment problems. Lower SES children experiencing higher amounts of self-care in first grade were rated by teachers (Teacher Report Form; Achenbach & Edelbrock, 1986) as having more externalizing problems in Grade 6 than lower SES children not experiencing self-care. However, daycare and sitter/relative care appeared to buffer the effects of low SES in that lower SES children experiencing these types of care showed better adjustment than lower SES children not involved in these types of care.

2.5.2 Children of the National Longitudinal Survey of Youth: Choices in After-School Care and Child Development, Vandell, Deborah Lowe; Ramanan, Janaki. *Developmental Psychology*. (1991). Vol. 27, no. 4. p. 637-643

Keywords: latchkey arrangements, adult supervised after-school care, single mothers after-school care, "at risk" children, National Longitudinal Survey of Youth, behavioural problems, cognitive assessments, United States.

Background: This study sought to address four questions: (a) Are there differences in demographic and family characteristics associated with children's after-school care arrangements? (b) Are there differences in child development associated with after-school care? (c) Are associations between after-school care and child development maintained after controlling for

differences in family characteristics? (d) Do different types of after-school arrangements differentially affect children from low-income, single-parent, or ethnic-racial minority households?

Methods: These questions were examined by using a national data set (U.S.) called the National Longitudinal Survey of Youth (NLSY). The NLSY was begun in 1979 as a survey of youth aged from 14 to 19 years. The original sample was selected with an over-representation of Blacks, Hispanics, and low-income Whites. In 1986, the survey was broadened to incorporate data from 4,953 children of the original female NLSY respondents. Children were directly assessed, and mothers were asked about their employment and child care used, in addition to other demographic information. This study focuses on the subset of third-, fourth-, and fifth-grade children within the larger NLSY data set. A total of 390 children (199 girls) were examined. At the time of the assessments (1986) 47.3% of the children lived in households whose incomes fell below the poverty line. Fifty-two percent of the children were members of single-parent households and most were born to adolescent mothers.

Independent variables: (a) type of after-school arrangement, (b) quality of the home environment. Three types of after-school arrangements were designated: Latchkey care - if the child cared for himself or herself or was cared for by a sibling less than 15 years old; other-adult care - if the child's after-school care was provided by the father, grandmother, other relative, baby sitter, or daycare centre; mother care - if the mother cared for the child after school. The shortened form of Caldwell and Bradley's HOME scale was used.

Dependent variables: (a) social, (b) emotional and, (c) cognitive development. A revised form of the Behaviour Problems index (Peterson & Zill, 1986) was completed by the child's mother. Children completed two scales from Harter's (1984) Self Perception Profile of Children. Three sub-scales from the Peabody Individual Achievement Test (PIAT) were used to measure children's mathematics, reading comprehension, and reading recognition. The Peabody Picture Vocabulary Test (PPVT) was used as an indicator of the children's verbal functioning. The Digit Span Sub-scale of the Wechsler Adult Intelligence Scale-Revised (WISC-R) was used as an indicator of children's short-term memory and attentiveness.

Results: Families using mother care after school had about 70% of the income of those families using latchkey or other-adult care. Families using mother care after school as opposed to

latchkey or other-adult care also had poorer home environments as measured by the HOME-SF scale. Differences in emotional support, but not cognitive stimulation, were the source of the overall differences on the HOME-SF scale. There were no significant differences in the emotional support provided by families using latchkey or other-adult care. Children who returned home to their mothers after school were typically rated as having more antisocial behaviours, more peer conflicts, and lower PPVT test scores than did children in other types of after-school care. The subsequent interaction analyses that controlled for differences in family income and emotional support revealed that these effects were restricted to single-parent families. These observations parallel other recent studies that have found negative developmental outcomes associated with exclusive care by single mothers.

Limitations: The sample was relatively small with limited statistical power, especially for detecting interactions between type of after-school care and family functioning. Data were based solely on mother's report.

2.6 Child Care Selection

2.6.1 Early Child-Care Selection: Variation by Geographic Location, Maternal Characteristics, and Family Structure, Fuller, Bruce; Keiley, Margaret K; Singer Judith D; Wolf, Anne. *Developmental Psychology*. (1998). Vol. 34, no. 5. p. 1129-1144

2.6.1.1 Keywords: Initial non-parental care choices, child care selection process, National Longitudinal Survey of Youth (NLSY), United States.

Background: Little knowledge is available about which families are most likely to select non-parental care and at what age in the child's life. This paucity of research makes it difficult to determine: When young children from different types of families enter non-parental care; whether access to early child care is equally distributed across diverse families; whether early child care selection puts only certain youngsters on a developmental trajectory that eventually includes exposure to centre-based pre-school; and whether the apparent effects of formal programs, such as enrichment programs, stem from the pre-school "treatment" per se or from prior selection effects rooted in the family's attributes and practices.

Research designs to date assume that home effects are direct, rather than recognizing that a parent's management of his or her child's time outside the home may yield additional indirect effects. The child care selection process over time, commencing with the child's care following

birth, needs to be adequately modeled. Three explanations have been advanced for why families differ in their propensity to select non-parental or centre-based child care.

Household economy and social class: One initial American article on selection of infant care shows that high-income and impoverished families display the greatest probabilities of selecting non-parental providers (NICHD). Some argue that working-class households are least able to use centres in the U.S., in as much as they are ineligible for subsidies and cannot afford private fees. Yet, low-income families in the U.S. (with incomes under $15,000 annually) are only somewhat more likely to use kin members and less likely to select centre-based care, compared with affluent households earning more than $50,000 (Hofferth, Brayfield, Deich, & Holcomb, 1991). Thus, in terms of type of arrangements, social class may not play a big role.

Family demographics and social structure: Better-educated parents are consistently found to be most likely to place their children in non-parental care. In the U.S., at least, many studies have found racial and ethnic differences in the use of child care, although the reasons for these differentials remain unclear. Variability across ethnic communities in the organized supply of centres or family daycare homes may further contribute to differences in the use of non-parental care. Parents, as they have more children, are less likely to select non-parental providers or they shift to less expensive forms of care.

Organisational-level factors: Variation in the supply of non-parental care across states (provinces) and localities may also influence the individual family's propensity to use care. Early studies used family-level data to draw inferences about supply, access, and the distribution of quality of non-parental care providers across local communities. The effect of mothers' previous employment has been found to vary depending on the child's age and on the number of other children in the home. This illustrates that the effects of any economic factor (in this case previous employment) on child care selection must be understood in the context of the family's social structure, not solely on parent's attributes.

2.6.1.2 Keywords: Initial non-parental care choices, child care selection process, National Child Care Survey (NCCS), discrete-time survival analysis, child care histories, United States.

Background: This article provides initial evidence as to which families are more likely to use non-parental forms of child care (babysitters, family daycare homes, kin members, and centres) and at what age initial entry into these settings occurs. The authors begin be reviewing what is

known about the child care selection process. They argue that the evidence continues to focus on later selection of centre-based programs for children 3-4 years of age and relies on traditional statistical methods - linear and logistic regression analysis. Such methods, it is argued, are ill suited for analyzing the unfolding pattern of child care selection over time. As an alternative, discrete-time survival analysis is used to model the event histories of a national probability sample of 2,614 children under 6 to determine whether and if so when, they first entered non-parental care. Commonly used by bio-statisticians studying human lifetimes, survival analysis can be used to study how long it takes for any event to occur, even when the event is within an individual's (or his or her parent's) control.

Methods: In early 1990, 4392 parents with at least one child under age 13 participated in the NCCS, a telephone survey focusing on child care issues. This article focuses on the youngest child in the sub-sample of 2,614 households with a child age 6 or under who had not yet entered kindergarten, in which a mother was present, and for whom the parent provided information on whether and, if so, when, the child first entered non-parental care.

Independent variables: (a) geographic location; (b) mother's characteristics - education, age at first birth, race/ethnicity, working before birth; and (c) family structure - single-parent family, number of siblings.

Dependent variable: entry (time) into non-parental child care (in months).

Results: Few differences were found in terms of urbanicity but large differences in terms of region. Unequal distribution of child care supply was observed across regions and communities. Nearly 1/4 of all children were placed in their first non-parental child care setting in their first 5 months of life. As children grow older, the probability of placement declined. Many women not known to be working during pregnancy placed their children into non-parental care. A positive relationship between mother's education and child care use was found. The older a woman was when she began her family, the less likely she was to place her children in care.

The effect of maternal employment during pregnancy was profound but varied both by the child's age and by the number of other children in the home. Among mothers who choose not to place the first-born child in care, the effect of previous employment diminished over time, disappearing entirely by the time the child turned 3. But if the target child was third born or more, the

probability of placement was much lower, even if the mother was working before the child was born. In other words, the effects of family size are not linear, but are observed most strongly after a third child is born. But maternal employment during pregnancy also had effects independent of the child's or family's specific demographic characteristics (e.g., single-parent status, maternal education, ethnicity, or mother's age at first birth). Controlling for the effects of geographic location, maternal demographics, and ethnicity, the odds of entry into care for children from single-parent families were nearly twice as high (1.9) as those for children from two-parent families. Overall, as others studies have found, mothers who are single, who worked during pregnancy, and who have no other children, are most likely to use non-parental care.

2.6.2 Measuring Non-Parental Care in the NLSCY: Content and Process Issues. Norris, Christina; Brink, Satya; Mosher, Patricia. Applied Research Branch, Strategic Policy, Human Resources Development Canada. Technical Paper T-00-1E. (August 1999).

Keywords: Non-Parental care, child care, child outcomes, characteristics of child care, patterns of non-parental care in Canada.

Background: In 1998, the Human Resources Investment Branch (HRIB) of HRDC released a series of reports profiling the characteristics and work environment of non-parental care providers working in the regulated and unregulated care sectors. The purpose of this technical paper is to use the work undertaken by HRIB on the child care sector to examine the content and process issues related to the measurement of non-parental care in the NLSCY. The paper also examines the pattern of non-parental care use in Canada, and the family and socio-demographic characteristics associated with use of specific forms of care.

Findings: In 1994, 33.2% of children between the ages of 0 and 11 years were in some form of non-parental care and there appears to be an emerging profile of children's care providers. Those who provide care in their own homes are typically older, married, and have children of their own. Cost of child care is influenced by both the age of the child and the type of care provided and care providers working in the child's home generally receive the lowest incomes.

As a family's socio-economic status (SES) increases so does their reliance on, usually unregulated, non-parental care (families of lower SES seem to rely mostly on daycare centres). Mothers under 40 are also more likely to employ some form of non-parental care.

Types of non-parental care have been shown to vary across the regions of Canada. Family child care and daycare centres are least used in the Atlantic Provinces and are most used in Quebec. Relative care is most popular in both the Atlantic Region and British Columbia.

Non-Parental care use is nearly equivalent between one- and two-parent families at 39.1% and 40.0%, respectively. However, two-parent families are more inclined to use unregulated and in-home care by a non-relative, whereas one-parent families tend to use daycare centres.

Families living in rural areas use non-parental care slightly less (34.9%) than families that live in the city (39.7% - 42.2%).

The structural aspects of non-parental care that should be taken into consideration for measurement include: group size, the quality of the physical setting, the training the caregiver has received, and the caregiver-to-child ratio. The process measures involve quantifying the interaction between the child and the caregiver as well as the actual care given. The affective aspects, the developmental "appropriateness" of the child care experience, and the caregiver's sensitivity and responsiveness should also be taken into consideration when measuring the quality of non-parental care.

3. Issues for Measuring the Impacts of Non-Parental Care on Child Development

This chapter examines the relevant issues for studying non-parental care and its impact on child development from the perspective of the ARB of Human Resources Development Canada. It will outline the main process and content issues to be considered for data collection regarding the role of NPC in child development.

3.1 Objective

The objective is to develop rich data, empirical evidence, and policy relevant information for two main purposes:

- to develop effective public policies, and
- to provide communities with tools to develop and refine local strategies and interventions to ensure that non-parental care arrangements give children optimal chances for healthy development and readiness for learning.

3.2 Past Research

Past research on NPC has focused mostly on children cared for in regulated daycare type settings as this was the most visible and commonly employed type of care (and thus easily studied). Many of the findings have presented child care in a somewhat negative light, with studies focusing on determining the potential harmful effects of placing infants and young children in care for extended periods of time. Now, as conventional thinking about the role of NPC has shifted, and care is viewed not so much as minding children but more in terms of investing in children, the focus of the research has also changed. Child development studies are now more apt to look at understanding the role of NPC as it relates to the child and for its abilities to hinder and enhance child outcomes. As the goals of the research change, the methods of data collection, and the instrumentation must also be adapted.

3.3 Theoretical Perspectives

The literature identifies several theoretical perspectives from which the role of NPC in child development could be understood, each of which has merit and relevance to the framework in which NPC will be studied. The three most significant, upon which most empirical research has been based, include attachment, socio-biological, and cognitive and social stimulation theories.

Each takes a different position regarding the ways in which non-parental care may impact children's development.

Attachment theories focus on the relationships children form with adult figures early in their lives. These relationships help infants to feel secure in their attachments to other people and assist them in developing the necessary confidence to seek out new experiences. Though infants can form relationships with any adult figures in their lives, including their fathers or caregivers, early theorists postulated that the primary attachment in a child's life was that formed with his or her mother. As a result of this hierarchy of relationships, early separation from the mother was seen as a risk factor for further problems.

However, children of many other cultures are often cared for by a variety of caregivers (family members, friends) and still continue on the path to healthy development. Theories of attachment therefore become particularly relevant to children in North American cultures, especially when viewed within the context of shrinking family sizes and greater mobility, which leave fewer relatives available to care for the child. As a result, many of today's infants form relationships with child care providers and other adults that they come in contact with because they may spend less time with their mothers, particularly those that work. Increasing numbers are being placed in child care at earlier ages. It has been suggested, therefore, that the theory needs to be updated to reflect current changes in child care patterns. Children still form attachments, and these attachments remain key for further development, but the circle in which the attachments can be formed has widened.

Sociobiological theories assert that genetic relatedness is key to ensuring high quality child care because biological relatives have a vested interest in ensuring that the child develop to his/her potential. Accordingly, the best care providers would be the child's parents or other close relatives. It has been argued, however, that a child's relatives do not always have the required expertise and training to provide high quality care, in which case an objective trained non-related care provider may be more apt to best care for the child.

Finally, there are the cognitive and social stimulation theories. These theories maintain that the quality of the child care environment, defined by the availability of age and developmentally appropriate materials and activities to stimulate cognitive and social growth, are the keys to

development. A high quality, enriching daycare environment, with a low adult-child ratio would be the ideal situation according to this theory as it would optimize children's opportunities to play with peers and develop social relationships. A low quality care environment could have harmful effects.

An additional factor, about which very little information could be found, concerns the concept of intentionality, which refers to the care provider's reasons for providing child care. Care providers who are committed to caring for children and who have chosen to become professional caregivers as opposed to those who ended up as care providers for other reasons (e.g., unable to find another job), are more likely to rank high on the concept of intentionality. Providers who are more committed to the child and his/her development are more likely to "pursue opportunities to learn more about child care and education" (Galinsky, Howes, Kontos, & Shinn, 1994, p.60). Such providers would, as a result, offer higher quality care that should lead to positive developmental outcomes for the child.

3.4 Main Measurement Issues

3.4.1 Difficulties of Measuring Children

Measures for children are often unstable as development is rapid in the early years and changes occur quickly. In addition, outcome data were not always collected during the early years. Furthermore, most surveys have focused on maternal reports of the child's care experiences, which are most often retrospective, and may be limited by the mother's ability for accurate recall (particularly, in cases where multiple arrangements were employed). Longitudinal surveys that follow children as they grow, such as the NLSCY, have the potential for increased validity as data are collected prospectively. Supplementing parent reports with data from care providers and even children themselves (when they are old enough) could also enhance reliability.

3.4.2 Structural and Process Indicators of Quality

The quality of the child's care environment has been shown, through theory and practice to be an important factor in contributing to healthy development. When studying child care environments two features of care, structural and process indicators, have emerged as important determinants of the quality of the care environment. Structural indicators refer to tangible, easily measured aspects of the care environment such as adult to child ratios, training of care providers, and the

characteristics of the physical setting (e.g., open, safe places for play, availability of toys, books, and games).

Process indicators on the other hand include to the more relational features of the care environment (e.g., sensitivity of caregiver, emotional closeness with child, disciplinary practices). Indicators of process quality are relatively new, but as the study of NPC advances and the importance of quality in care environments is highlighted, they are increasingly becoming employed.

3.4.3 Collecting Information

Many of the characteristics associated with child care quality in the previous section relate to characteristics of the caregiver or the care environments that are not best assessed through a parent questionnaire. Although parents may be able to speculate on the training and experience of the provider, other aspects of care, such as the nature of the caregiver-child interactions, and the content of the care program (e.g., provision of learning activities and daily routines) are difficult to assess through parent report.

Because most measures of process quality involve direct observation in the child care setting, the NPC provider or parent questionnaires may not be able to accurately assess these characteristics. An observational assessment of care settings, however, is not a feasible option for the NLSCY at this time. As an alternative, interviewing care providers is recommended to supplement the existing parent questionnaire. This interview should consist of similar questions to those posed on the parent questionnaire (to validate parent responses) and questions complementary to the parent questionnaire (to measure new concepts best assessed by the care providers).

3.4.4 Potential Bias of Care Provider Survey

Interviewing care providers is an important step toward understanding the child's experience in non-parental care, and obtaining an estimate of the quality of the care environment. However, there is concern about potential for bias when relying solely on care providers for information. Surveys of NPC providers often ask providers to comment on the availability and accessibility of educational materials in their care environments, the child's opportunities for play, and the frequency and nature of group outings. This increases the possibility that biased estimates will be obtained as caregivers may depict the care arrangements as more favourable than is actually the

case. Again, when possible independent observer assessments of the setting may provide more accurate results.

3.4.5 Separating the Effects of Different Aspects of Care

The literature identifies three aspects of the child care experience that may offer important contributions to child development: location of care, quality of care, and the characteristics of the caregiver. The most salient features of each of these elements of care and the manner in which they can interact and affect one another, however, are not clearly understood.

In terms of location, both options (in- and out-of-home) offer advantages to the child. In-home child care has the benefit of allowing the child more individual attention in a familiar environment, while allowing closer supervision by the parent and parental input into the child's daily activities. Out-of-home care to the contrary, can provide the child with greater opportunities for socialization and interaction with other children, as well as the benefit of structured daily programs and activities.

Although the quality of the care environment can vary dramatically from one care setting to the next, there is no dispute that regardless of types higher quality environments can contribute to healthy outcomes. Furthermore, the characteristics of the caregiver, (e.g., education, training, commitment to children) will influence the types of activities provided and the relationships that are formed by and with the child. Research that is able to identify the independent effects of these factors is necessary in order to understand the aspects of care that are key to positive outcomes.

3.4.6 The Child as Part of a Larger Environment

Children's individual characteristics as well as those of their families and the larger neighbourhood context in which they live will influence their behaviours and development. These characteristics will also interact with those of their care environments to determine developmental outcomes.

Characteristics of the care experience such as the age at which the child was first placed in care, the number of hours spent in care and the stability of the care arrangement may contribute to development, either independently or by interacting with characteristics of the child's wider environment. Family socio-economics status, for instance, may influence whether or not the child is placed in care and if so the age at which the care begins. Economic circumstances may also affect the type of care that is received, considering, for example that relative care is often more

economical than care by a registered nanny or that in a private facility. Other family characteristics such as maternal education, single parent status and employment during pregnancy have also been positively related to increased likelihood of using child care.

From a wider perspective, public policies regulating the availability and accessibility of affordable high quality care programs can also influence the processes at work within the family, the child, and the wider neighbourhood. In essence, children are a part of a larger context, and the characteristics of this larger context (individual, family, and community factors) can all impact their development. The challenge will be to separate the effects of the child care experience from the other factors in the child's environment.

3.4.7 The Role of Other Caring Adults

Attachment theorists make reference to a hierarchy of relationships in the child's life, stressing the importance of the mother as the main attachment figure. However, as infants are increasingly being placed in care at younger ages, attachments are likely to form with other adults in their lives as well. The number of caring adults and their relative positions in the hierarchy of relationships can have positive or negative consequences for the child's development. The relative effects of parenting and caregiving have to be examined in light of attachment.

3.4.8 The Source of Care

The main theories identified in the NPC literature infer that certain people in children's lives are best suited to be their care providers. Attachment theorists postulate that the primary role of the mother, while the socio-biological viewpoint maintains that any of the child's relatives would be better equipped to provide this care than non-relatives. Empirical research, has to some extent contradicted these perspectives, with studies indicating that it may be the overall quality of the care received rather than the person who is providing the care that is the most important factor. The characteristics of the caregiver remain important, according to the research, because child care can enrich developmental experiences, complementing the care provided by parents.

3.4.9 Stability and History of Care Arrangements

Changes in child care arrangements are common in the early years. Infants, in particular are likely to experience changes. One study reports that close to half of infants are cared for by a relative when they first enter care, but that there is a strong shift toward care in a daycare centre or family

daycare home during or after the first years of life. In Canada, in 1994, approximately 23% of infants and toddlers and 25% of preschoolers had experienced a change in their main care arrangement in the preceding year, and the impacts of this instability are not insignificant. Children who have experienced transitions in care arrangements have scored lower on tests of verbal abilities, and boys have been rated as having more difficult temperaments. These effects were independent of family background characteristics.

Therefore, when trying to understand the effects of child care on development (and the effects of transitions in care), it will be important to trace the child's history of care arrangements and how the characteristics of each care environment may interact to contribute to development. However, as children shift from one care arrangement to another it is likely that both the process and structural indicators of the care environment will also change and thus it may be difficult to determine which factors, in which of the care settings, had the greatest contribution. But it may be possible to examine the effect of consistently high quality care on development with that of children who experience changes or a drop in quality.

3.4.10 Critical Periods of Development

Children of different ages and at different stages in the developmental process may have different child care needs. Furthermore, frequent transitions in the child's main care arrangement at critical periods of development may also impact on age-related outcomes. In addition, there may be crucial ages at which placement in care and the characteristics associated with that care arrangement have long term effects, while at other times the effects may be insignificant or of limited duration.

3.4.11 Distribution of Children in Care

Regulated daycare arrangements (particularly centre-based care) are highly visible and easily studied and have therefore often been assumed to be the most commonly employed type of child care. However, data from the 1994 collection of the NLSCY indicate that of the children aged 0 to 5 using non-parental care in this country over 71% are using non-regulated forms of care. Most previous studies on child care have focused on children being cared for in daycare centres and information on other types of non-parental care are scarce. The NLSCY should provide data to

examine the impacts of care in all types of care environments in order to determine the characteristics of the different care environments that may be associated with positive outcomes.

3.4.12 Relevance of Scales

A variety of observational scales have been developed to measure process quality in care environments. However, many of the scales were developed for use in specific sites (mostly daycare centres, or in licensed family care), as these were the settings in which child care was most often studied. The relevance of these scales for other settings, therefore, is questionable, as they were not designed to be used across a broad range of care environments. The HOME scale, the Belsky and Walker Spot Observation Checklist, or the Observational Record of the Caregiving Environment (ORCE)are promising as they are able to rate quality of child care using a scale that is common to several different forms of care (Cleveland & Hyatt, 1997).

3.4.13 Sampling Care Providers

There are a variety of ways to select child care providers for inclusion in non-parental care studies, but most research in the field has employed one of two main methods. Either the care centre is selected and from there the family of the child is contacted, or, the child and his/her family are selected and then information is provided by the family about the child care setting and how to contact the main care provider.

Under the first option, the child care facility or provider is used as a sampling frame and then children attending a certain facility are chosen for inclusion in the study. Listings of licensed care facilities (i.e., daycare centres) are generally easy to obtain using this method, but accessing children who are cared for in home care arrangements (their own or someone else's home) often presents difficulties for researchers. As a result, very few studies have included this group of providers (Clarke-Stewart, Allhusen, & Clements, 1995). By conducting a random telephone survey during the day (a time when most care providers would be working) a recent study conducted by the Sectoral and Occupation Studies Division (SOSD) of the Human Resources Investment Branch was able to overcome this difficulty and was able to identify a variety of unregulated care providers for study.

Although the first method was effective and yielded high response rates, it would not be useful for this research. Since the NLSCY sampling frame uses the child as the unit of analysis, the second

option is the most feasible. In the NLSCY, not all care providers will be surveyed, but only those of children contained in the sample. Similar studies (e.g., NICHD Early Child Care Research Network, 1998) asked children's parents to provide the name and phone number of their child's care provider and then had the interviewer contact the caregiver directly. Although this method is an effective way to get access to the variety of care providers that children use, in at least one study (Statistics Canada Pilot Study for SOSD) this method had lower rates of response than those seen when sampling care providers directly (Methodology paper, SOSD, unpublished). Decisions regarding sampling and contact issues (following section) should therefore be made in an effort to maximize response rates and preserve the reliability of results.

3.4.14 Contact Issues

Although the best option for identifying caregivers may be to ask the parents, the optimal method of first contacting them (e.g., having the interviewer telephone the provider, sending a letter informing the provider of the research, having the parent contact the care provider) has yet to be determined. It is also important to consider both the time of day, method, and the length of the interview. Ideally, data should be collected through a telephone survey because it is quick, efficient, and the least intrusive. The interview should last no more than 20 minutes.

Issues of timing must also be resolved. When would it be most convenient for caregivers to be surveyed – during the day when they are busy caring for the child, or in the evening when they are not working? In addition, offering the parents a chance to review the content of the child care questionnaire before it is administered may increase the number of contacts that are obtained.

4. A Framework for Research and Data Collection

This chapter has three main purposes: It will create a framework for a) studying non-parental care arrangements in Canada; b) examining the potential independent effects of non-parental care on child development; and c) focusing both instruments and analysis on answering the research questions set out at the end of the chapter.

4.1 Context

The number of children growing up in families where both parents work is steadily increasing in Canada, due to increasing rates of maternal employment. In 1994, the first cycle of data collected from the NLSCY revealed that 63% of Canadian mothers were working outside of the home. In addition, many of these women are now working when their children are much younger. Employment rates of women with children six years or younger have risen over a 30 year period (from 1960 to 1990) from insignificant levels to over 60% (Lefebvre and Merrigan, 1998). These numbers are unlikely to decline because of changing economic circumstances requiring two incomes to maintain a family's desired standard of living while raising their children. Therefore, for a large number of children of single and dual working parents, non-parental care is becoming an important part of their experience of childhood.

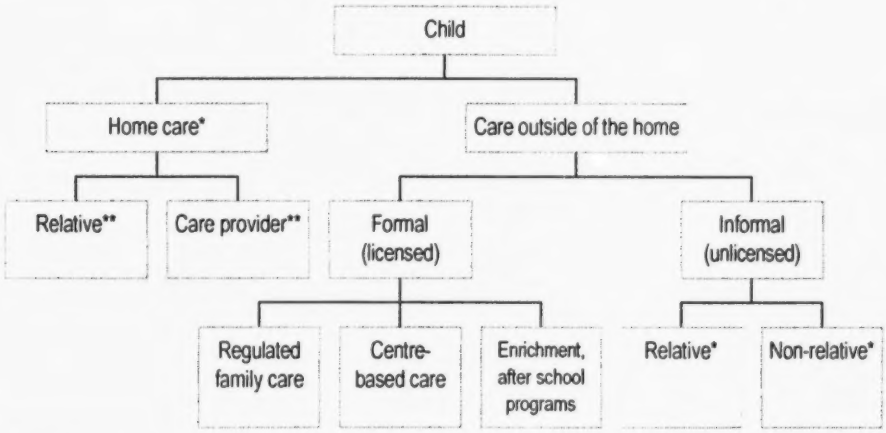
Early research on child care focused mainly on children who were cared for in regulated daycare centres. As such, the term child care and daycare have frequently been used interchangeably. Only recently has the term non-parental care emerged to encompass the wide variety of care arrangements that are now commonly employed. The broadening of our understanding of NPC arrangements has also been accompanied by a shift in thinking. Although traditionally when discussing child care, the child's parent was often the focus (arrangements for the convenience of parents to leave their children when working), today more emphasis is placed on the child and the implications that the care experience may have on his or her development. As a result, the characteristics of various NPC environments (with an emphasis on the quality of the care) are increasingly being studied in an effort to determine the extent of their impact on children's healthy development. Since working parents are a reality, a goal of future research then, is to understand the aspects of care from which the child can benefit, in order to promote them.

Studies have shown that the absence, during the day, of working mothers does not necessarily cause negative effects in children. However, the differential impacts of various non-parental caregivers, the forms of care and the quality of care are not known. Nevertheless, since non-parental care is a mainstream experience for most Canadian children, understanding its influence on child development is an important public policy concern.

4.2 An Overview of Non-Parental Care in Canada

A wide range of non-parental care arrangements is presently in use across Canada. Figure 1 examines the existing types of non-parental care. Care arrangements are divided on the basis of where the care takes place, and then according to whether the arrangement and provider are licensed (formal care) or unlicensed (informal care). Each care environment is described below. The NLSCY currently questions parents about all types of care depicted in the model except care in enrichment programs.

Figure 1: Child Care in Canada



* May be paid or unpaid

** Could be a licensed care provider

In-home child care has several advantages. It allows the child to remain in a secure, familiar environment and, because it is generally only the child and his or her siblings that are cared for in such arrangements, parents can closely monitor the quality of the care that the child is receiving while ensuring the child a great deal of individual attention from the care provider. If the child's care provider is also a relative, (which is important for development from the socio-biological

perspective), it is often the least expensive and most stable form of care. Care by a non-relative, particularly if the caregiver has training in the field or is a licensed care provider (i.e. a nanny) can be one of the most expensive forms of care. The special skills and education of such a provider, however, could contribute to a very high quality care experience.

There is a broad range of out-of-home care arrangements, which are the most common forms of child care in Canada. Out-of-home care is often subdivided based on whether the arrangement and care provider are licensed (formal care) or unlicensed (informal care). Informal care is an unlicensed arrangement in which the providers (either relative or a non-relative) cares for children in their own homes. The number of children cared for at one time may vary, from one to several and the care provider may be paid or unpaid, depending on the arrangement. When several children are cared for at one time, these arrangements are generally referred to as family daycare, daycare homes, or even family daycare homes. If more than six children are receiving care this care arrangement may also be known as group daycare homes. Family daycare may also fall under the classification of formal care if the care provider is a licensed caregiver. Regulated and unregulated family daycare share many of the same characteristics.

There are several advantages to this type of care. Often, these care settings are in convenient locations close to the child's home, in neighbourhoods in which the child is comfortable and familiar. Because of the smaller numbers of children in care, parents can to some extent (more so than in a daycare centre, but less than in in-home care) provide input and monitor the child's daily activities. Though family care is less likely to offer a structured program, it does give children the opportunity to interact with others youngsters in a homelike environment thereby promoting social development. This care setting is beneficial for busy parents, as it is often very flexible, and can keep siblings of different ages together.

Centre-based care is by far the most well-known form of regulated care. Daycare centres may care for small or large numbers of children (sometimes as many as 300), with children divided into classes according to their age and parents' preferences. Care providers usually have some training in early childhood education and are teamed up with one or two other teachers. Centres are most likely to follow structured programs focusing on all aspects of development, and because of the larger numbers of children attending, provide good opportunities for social interaction.

Although much less common in younger children, after school and enrichment programs represent an additional form of care used by Canadian parents. Enrichment programs (e.g., Better Beginnings, Community Action Programs for Children – CAP-C) are generally targeted programs which are designed to prevent problems, promote healthy development, and enhance abilities of children from disadvantaged families and communities. Their focus is on prevention and early intervention.

After school programs (of which enrichment could be an example) actually cover a broader base then the term implies. Many parents work shift work, and therefore may require child care in the early morning or late evening as well. The term extended working hours care would perhaps be more accurate. Often these programs are run in schools or community centres by community organisations such as the Boys and Girls Club or the YMCA. They are most commonly employed by older children, but may also be used in conjunction with other care arrangements.

4.3 The Changing Role of Non-Parental Care in Canada

The variety of care available to and used by parents has changed over time, and as demographic and economic trends continue to fluctuate it is likely that these changes will continue. The longitudinal focus of this research will allow for a better understanding of the ways in which such changes in child care arrangements may influence children as they grow.

Results from the first collection of the NLSCY in 1994-1995 reveal that approximately 40% of children aged 0 to 5 are cared for on a regular basis in some type of care arrangement so that their parents or guardians can study or work outside the home. The majority of these children are cared for outside the home. Only 22% of the children receiving care are cared for at home, either by a relative (7.8%) or a non-relative, such as a baby sitter or a nanny (14.1%). Approximately 29% of children are cared for in licensed care arrangements, the majority of which (19.8%) are being cared for in a traditional daycare centre. Unlicensed care arrangements (most often care in someone else's home by either a relative or non-relative) account for 48% of the children in care. The remainder of children (just over 1%) report being cared for in before or after-school programs.

The 1996 data reveal similar patterns in care usage, with 41.2% of children aged 0-5 receiving some form of NPC in cycle two. Just over 25% of these children are cared for at home with

increases seen over the two cycles in the numbers of children cared for at home by relatives (brother or sister care increased from 0.3 to 2.6% and care by another relative increased from 7.5 to 10.1%) while the prevalence of care by a non-relative slightly decreased. A decline was also seen in the numbers of children who employed non-relative, unregulated family daycare (from 33.7% in 1994 to 30.6% in 1996). The number of children in regulated care arrangements remains almost unchanged (28.5%).

As children age the main type of care arrangement that is used also varies, with most of the changes occurring for children who are cared for outside of their homes. Infants are most often cared for by relatives when they first enter care, with a shift toward the use of family daycare and homes and daycare centres during and after the first year of life. As would be expected after school programs for children 6 and older are more common, while use of formal care arrangements for this age group (especially centre-based care) declines.

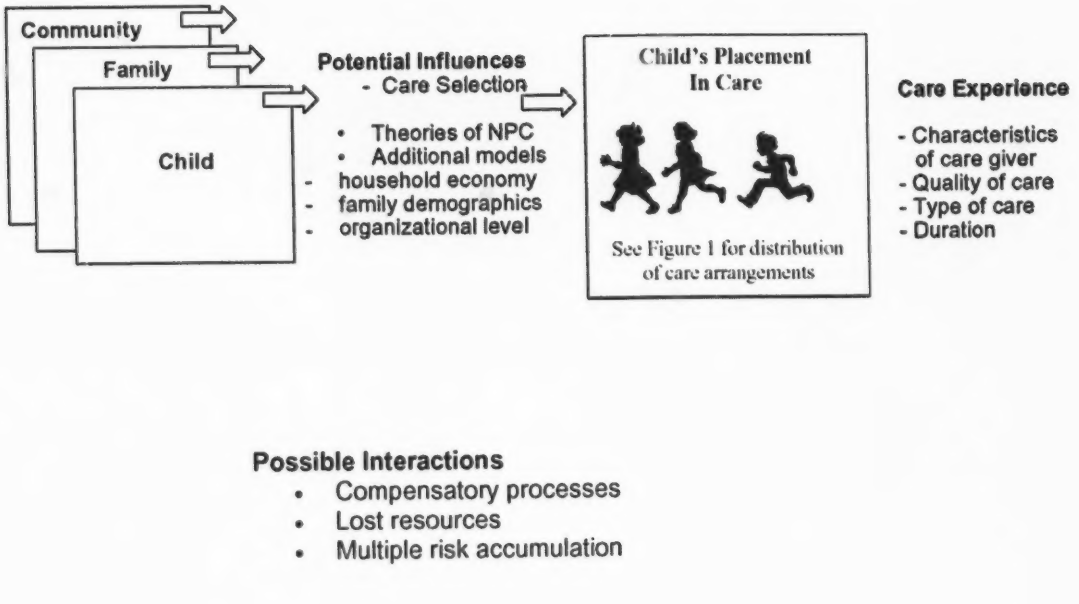
4.4 Framework for Studying Non-Parental Care

There are a multitude of factors that influence children's use of child care, the quality of that care, and the ultimate impacts the care experience has on child development. Figure 2 depicts a conceptual model describing the relationships between NPC and child outcomes.

4.4.1 Child, Family, and Community Influences in Selecting NPC Arrangements

Starting from the left, there are three rectangles representing the child, the family, and the larger community of which the family is a part. Each of these factors influences the child's placement in care and the type of care that is employed (from Figure 1). The main determinant of care use is the child's age, (infants are less likely and preschoolers more likely to use NPC). Moreover, care by a relative is increasingly being chosen for younger children, while daycare centres are used more as children age. The effects of early entrance into care could have positive or negative impacts depending on the quality of the child care setting and the family's characteristics.

Figure 2: Framework for Studying Non-Parental Care



There are a variety of family characteristics that have been shown to influence whether or not children receive NPC and the type of care arrangements that are favoured. The three main theoretical approaches to studying child care all hold different viewpoints regarding how care arrangements are selected. Attachment theorists postulate that as the mother is the child's primary attachment figure she should also be the main caregiver in order to minimize mother-child separation. Socio-biological theorists, with their focus on genetic relatedness, favour relatives as care providers as they have a genetic investment to protect in the child, and should therefore provide the best care. Followers of cognitive and social stimulation theories, with their emphasis on enrichment, learning, and developmental activities would likely recommend that the care environment offer structured activities and programming promoting child development, and the highest quality care by trained caregivers. Such practices are most often found in daycare centres, but may also be seen in other settings.

Three additional factors postulating why families differ in their likelihood of selecting particular forms of NPC arrangements have also been proposed to further explain the care selection process.

a. Household economy and social class: Household economy as the name implies focuses on the role of the family's economic status in influencing decisions regarding the selection of the child care setting. Studies have found, for instance that employment during pregnancy has been positively associated with child care use. Effects of previous maternal employment, however, have been found to vary according to the child's age and the number of other children in the home, cautioning that effects of economic factors need to be interpreted within the context of the family's larger social structure.

Income also appears to exert a bipolar effect with research indicating that both higher-income and impoverished families are most likely to make use of NPC. Some of the findings pertaining to income have been contradictory. It has been argued that ineligibility for subsidies and an inability to afford private fees, have prevented working class households (at least in the United States) from using centre-based care. Other work has shown that low-income families (under $15 000 a year) are only somewhat more likely to use relatives and less likely to select centres as their main care providers than families earning over $50 000. More research, using Canadian data is clearly needed to provide a picture of the distribution of child care in Canada.

Economic barriers (i.e., low income and high program costs) that prevent children from accessing quality child care highlight the issue of choice versus necessity when selecting NPC arrangements. Families with higher incomes have more NPC options available to them, whereas lower income families have to use care arrangements that they can afford and that respond to their needs. Low income families are more likely to do shift work or hold more than one job, requiring flexible child care which is less available. Negative or positive impacts on child development are possible, depending on whether the environments is supportive and if the care is of high quality. Outcomes in relation to expenditure must be studied.

b. Family demographics and social structure: Relevant research has found that better-educated parents and better educated mothers in particular are more likely to place their children in NPC. Single mothers are also more apt to make use of child care. Parents with more children are less likely to select NPC arrangements, and if they continue to use care, they often switch to less expensive forms. Women who delay child bearing (i.e., are older at first birth) are also less inclined to regularly use NPC.

c. Organisational level factors: These factors take into account the characteristics and potential influence of the child's wider environment. In this sense, the community in which children are raised is an essential determinant of their care experience, as the supply of affordable, accessible child care has the potential to vary from one region to the next. Moreover, depending on the parents' preference for having the child cared for in close proximity to their work or the child's home, selection of care arrangements may also be influenced by the geographical location of the care centre.

4.4.2 The Influence of Non-Parental Care on Development

The characteristics of the child's care environment and caregiver and the quality of the care experience can also influence their development. Most of the work examining the impacts of child care has focused on children in daycare centres because it is the most visible and easily identified child care arrangement. Studies have shown that children attending centre-based care have demonstrated higher cognitive and language outcomes and a higher level of school readiness than children in other types of care settings with comparable quality. In addition, children in care centres have to some extent also been shown to exhibit more advanced social development than children in other non-familial arrangements. While these children tend to be more confident,

outgoing, assertive, and less distressed, timid, and fearful in new situations, they have, at times, also been found to be less polite, agreeable, and compliant, and more likely to have behaviour problems than those who have not been in daycare.

Little comparative Canadian research is available on child outcomes resulting from the different types of care arrangements. The work that has been done indicates that children from low-income families who participate in out-of-home care (both regulated and unregulated) have better vocabulary skills than children who are not receiving NPC or who are being cared for by a relative. Studies have also found that children cared for in daycare homes or by in-home providers score at similar levels on tests of cognitive ability compared to those who stay at home with their mothers. This finding is significant because these levels tend to be lower than those seen in high quality daycare centres or early childhood education programs. Group care has also been associated with decreased problem behaviours at age 3.

4.4.3 Duration of Care

There has been concern that exposing children to NPC for long periods of time can have detrimental effects on their development. Empirical findings have, however, been conflicting. Some studies have found that children who spent more time in child care during their first 5 years of life scored lower on measures of positive adjustment (peer popularity, teacher-rated behaviour problems) and higher on measures of maladjustment (teacher-rated behaviour problems, peer-rated aggression, peer dislike) than children with less child care experience. These effects were significant after controlling for a variety of family background characteristics.

Other studies have reported that though two year olds spending large amounts of time in NPC may exhibit more behaviour problems, these effects seem to disappear by the time they turn three. Authors do note, however, that it is possible that these effects could re-emerge when children age and experience new phases of development. Still other studies have found that family characteristics including income and education were the strongest predictors of child outcomes, whether the child was cared for almost exclusively by the mother or had extensive NPC.

Whatever the effects, with increasing numbers of children using NPC at younger ages, the impacts of age of placement in care and the duration of that care require further study. Furthermore, because shifts in care arrangements are not uncommon among infants and young children, it is

important to understand the potential effects of stability in the care environment (or lack thereof) on children's development.

4.4.4 Characteristics of the Caregiver

Individual characteristics and behaviours of caregivers can influence development through the care provider's interactions, relationships, and commitment to the children, and the quality of the programming that they provide. Caregiver education and specialized training can have an important impact on their behaviours and interactions with the children. Studies have also shown that providers with less than 2 or 3 years of child care experience tend to be more passive and less likely to initiate educational activities.

Instability in the caregiving profession can influence the stability of the child's care experience as indicated by the turnover rate of paid care providers (this is especially relevant for centre-based care where teacher turnover can be high). Stability of the care provider is important for two main reasons. First, it allows children to form lasting relationships with their caregivers and other children in care, and second, it is an indicator of overall working conditions, job satisfaction, and wages. A 1992 study found that compared to other workers in education or related fields, child care workers had relatively high turnover rates (Caring for a Living, 1992), partially due to low wages, lack of benefits, and poor working conditions.

The type of care setting in which they are employed also influences the manner in which caregivers may interact with the children. When fewer children are receiving care (i.e. in-home care, or family daycare) the caregiver may be better able to provide individual attention and engage in more positive or sensitive interactions with the children. Disciplinary styles may also vary among care settings and providers.

There has been less research examining other characteristics of caregivers such as their beliefs about child rearing and development. Their degree of commitment or emotional investment in the child has also been studied less often, although socio-biological theorists have postulated that non-familial caregivers would be less committed to the child.

4.4.5 Quality Care

The quality of the care environment defined by both structural and process indicators is one of the most important characteristics for shaping child behaviour and development. In particular, certain

aspects of child care, such as the adult-child ratio, the physical environment of the daycare setting, and availability of educationally oriented daily programs have been shown to be important indicators of quality care. Other factors such as the heterogeneity of classes (in terms of age) and the number of children in care can also influence the quality of the care experience.

Research has linked quality child care, which should potentiate warm, enriching, and sensitive interactions, to increased language, social, and cognitive competencies of children of all ages. For instance, children in higher quality care environments (e.g., increased positive language stimulation and interactions between provider and child) had higher language abilities between 15 and 36 months, better cognitive development at two years, and increased school readiness at age three. In addition, for children spending three or more of their preschool years in out-of home care, process indicators such as quality of interactions predicted verbal competence, while structural indicators (ratios, group size, age, and age range) predicted math abilities. Quality of the care environment can also function to even out the performance levels among children cared for in different care settings (i.e., if daycare homes are of higher quality the developmental differences between children in daycare homes and those in daycare centres are reduced). Therefore, the quality of the care setting appears to be a crucial determinant of child outcomes, perhaps even more important than the type of care that is received.

4.4.6 Child Outcomes

The final component in the model (interlocking circles) represents the 5 spheres of child development. A holistic view of development requires healthy outcomes across each of the five spheres representing physical health, emotional and social development, cognitive learning, and language communication. The goal of this research is to determine the means by which NPC influences each aspect of development, after accounting for child and parent characteristics. Lines connect each of the "developmental circles" because the outcomes are inter-related and may impact or be impacted by the others. Although some outcomes are required for the child to move on to the next stage of development, each is a key component in their overall healthy development.

4.4.7 Explanatory Processes Influencing Development

Although each aspect in the model can contribute in its own way to children's outcomes their effects are not independent of other factors. Interactions can occur in a variety of ways between any of the components. The main interactions between the child's background characteristics, their care arrangement, and their development have been conceptualized according to three main explanations a) compensatory processes, b) lost resources and c) multiple risk accumulation. These interactions are symbolized by the large gray arrow surrounding the model, stretching from the family, through each of the factors, to the child's outcomes.

Compensatory processes focus on the protective role that a care arrangement can have when children are exposed to a risk(s) in their home environments. In such cases, the expected negative impact resulting from vulnerable characteristics in the child (poor temperament) or his/her family (such as unemployment or poverty) may not be realized if the child's care environment is of high quality as this could mitigate the child's probability for exhibiting problems. For instance, a study by Caughy, DiPietro, and Strobina (1994) found that children from impoverished environments who had been placed in care before their first birthdays scored higher on reading recognition tests, than children from comparable environments who had not received child care.

Lost resources explains outcomes, when the home environment alone is better than a combination of home and the care environment. Lost resources would be more applicable to children who, because of their good family and home environment, are at low risk of problems. Children who come from high-risk environments are likely to gain reassurance and benefit from care, while for children in low risk environments child care may (dependent on its quality) have no effect, or even increase risk of poor outcomes. Children from higher quality home environments scored lower on measures of reading and math if they had been placed in care before their second birthdays (Caughy *et al.*, 1994).

The NICHD Early Child Care Research Network identified the impacts of multiple risks, which as the name implies, examines the impact of accumulating risk factors associated with the child, the family, and the care arrangement. If risks are present in all sources, outcomes are likely to be negative. Their research, for instance, has indicated that when insensitive mothering was combined with lower quality, unstable, or higher quantities of care, infants were more likely to

develop insecure attachments. The presence of several protective factors, however, may buffer the effects of one or two risks and contribute to an overall healthy outcome.

4.5 Research Questions

Since a rising proportion of children experience child care, the policy goal would be to ensure that child care makes positive contributions to child development. In order to further understanding of the ways that different types of non-parental care can have an impact on children's development and the role of quality of the child care environment in such impacts, the following research questions have been proposed.

a. What are the types of non-parental care that Canadian children experience? Are there shifts in the distribution of care arrangements over time?

b. How do the various types of non-parental care effect children's outcomes?

c. What factors are associated with each type of non-parental care, and how do they effect child outcomes?

- location (in or out of home environment)
- characteristics of the caregiver
- quality or nature of programs

d. Do the effects vary with the child's age, socio-economic status or other family or community factors? Which are protective factors?

e. What factors (income, parents' education, distance, age of child, and cost) affect the child's placement in care and the type of care that is chosen?

4.6 References

Lefebvre, P. & Merrigan, P. (1998). *Parents' Conditions and Characteristics Employment and Children's Outcomes*, ARB, HRDC.

Canadian Daycare Advocacy Association and the Canadian Child Daycare Federation. *Caring for a Living: A study on Wages and Working Conditions in Canadian Child Care. Final report.* (1992).

Additional references: Refer to annotated bibliography, Section 2.

5. Questions for Measurement and Data Collection

5.1 Purpose

This chapter outlines some of the key questions that arise when seeking to measure the impact of various forms of non-parental care arrangements on children's development. In order to collect information on the most influential aspects of the NPC environment, two methods of data collection (NLSCY Parent Questionnaire and care provider survey) were proposed. Section 4.2 examines questions posed to parents regarding their children's care arrangements, while Section 4.3 outlines some of the questions included in a telephone interview with the child's care provider.

5.2 The NLSCY Parent Questionnaire

The parent questionnaire used in the NLSCY currently contains a very comprehensive set of questions concerning the child care arrangements of 4 and 5 year old children. The child care portion of the questionnaire focuses on the type and history of care received, the child's relationship with their primary care provider, and a variety of questions about the characteristics of the care environment (e.g., skills and training of provider, type of activities, number of children cared for, and the availability of clean and safe play spaces). Additional content, however, is recommended in order to ensure that each of the framework components is adequately covered. The main additions for the parent questionnaire focused on increasing questions on the factors influencing parents' selection of non-parental care arrangements such as program costs, location, and program content.

5.3 The Care Provider Survey

Based on an in-depth review of existing surveys and literature in the field, potential questions to be employed in a telephone interview with non-parental care providers were developed. The questions were selected based on their ability to answer the research questions, and in particular by their ability to provide data on the characteristics of the environment, the caregiver, and the quality of the program. The questionnaire design is thorough in the structural measures of quality (e.g., group size, training, ratios, and some aspects of physical setting), but it is much more difficult to measure process indicators of care, which try to quantify the actual quality of care the child receives and the nature of the caregiver-child interactions. Some indicators of process

quality such as the degree to which providers encourage cognitive, social and other development can be studied by questioning the care provider directly, others however, (e.g., physical contact with, and responses to the child) are much better measured by direct observation of the care setting. Questioning care providers directly could bias results because providers may be more inclined to report positive practices. Therefore, only process indicators that can be relatively accurately assessed by the telephone survey such as the frequency of certain behaviours or daily routines and activities are examined in this study. Others (e.g., physical contact with the child, disciplinary styles) that are best measured through direct observation, will not be covered.

5.4 Current Content in the NLSCY (94-96) and Recommended Changes

Table 1 outlines the data to be collected. It is divided into two main sections, one describing the items to be collected through the NLSCY questionnaire, and the remaining items to be collected through the NPC provider survey[3]. A single NPC provider questionnaire was developed to be applicable to care providers working in both home and centre based arrangements. Concepts to be measured have been classified according to the categories outlined in the research framework (see Table 1). The left most column (column 1) denotes the component of the framework that is addressed by each of the questions, and columns 2 and 3 refer to the distribution of the questions between the NLSCY or care provider survey, respectively. All of the questions currently contained in the NPC component of the NLSCY are included in the table, with bolded items signifying new additions. Some overlap is planned so that some of the concepts to be measured are included in more than one of the framework components. In such cases, the component that best describes the item was chosen. Table 2 lists the source of the questions on the care provider survey.

[3] Sections of Table 1 are also printed in Norris, Brink, & Mosher. *Measuring Non-Parental Care in the NLSCY: Content and Process Issues*, Human Resources Development Canada, Strategic Policy, Applied Research Branch Technical Paper T-00-1E. (August 1999).

Table 1: Measuring NPC and Its Impacts on Development - Items to be Collected in the North York Pilot Project -

The Child's Care Experience	*Source of Questions...*	
	NLSCY	***Care Provider Survey***
A. Childcare Selection	1. What age was .... when he/she was first placed in a child care arrangement? 2. Approximately how much do you pay for the main child care arrangement each week? • $_____ per week • unpaid 3. Did you consider any of the following care options when choosing your main child care arrangement? Mark all that apply. • Daycare centre • Care in non-relative's home • Care in relative's home • Care in own home by a non-relative • Care in own home by a relative • Care in a before or after school program • Care in an enrichment program (e.g., Better Beginnings Now, Cap-C) • Other _____ 4. When deciding on .....'s child care arrangement how important was each of the following factors? • Care can be provided in your home?	

The Child's Care Experience	*Source of Questions...*	
	NLSCY	***Care Provider Survey***
A. Childcare Selection (cont.)	• The caregiver could accommodate more than one child in your family? • Flexible hours (e.g., if you had to work late or if your child were sick) • Location of the care arrangement • Cost of care • Qualifications of the provider • The care giver to child ratio • Daily activities and programs provided • Safe, clean play spaces available • Child would be taken on outings	
B. Type of Care Employed	1. Do you currently use childcare such as daycare, babysitting, care by a relative or other caregiver, or a before and after school program while you (and your spouse/partner) are at work or studying? 2. Do you currently use childcare such as daycare, babysitting, care by a relative or other caregiver, or a nursery school while you (and your spouse/partner) are at work or studying? 3. Do you currently use childcare such as daycare, babysitting, care by a relative or other caregiver, while you (and your spouse/partner) are at work or studying? 4. Which of the following methods of childcare do you currently use? For how many hours a week? • Care provided in someone else's home by a non-	1. Some childcare workers decide to obtain a license to provide childcare, while others choose to work privately. Do you have a license to provide childcare? 2. Which statement best describes the arrangement under which you operate: • Personally hold a license to provide family daycare • Work through a non-profit agency that is licensed • Work through a for-profit agency that is licensed

The Child's Care Experience	Source of Questions...	
	NLSCY	***Care Provider Survey***
	relative? Is the person providing this care licensed by the government or approved by a family daycare agency? • Care in someone else's home by a relative? Is the approved by a family daycare agency? • person providing this care licensed by the government or Care in own home by a relative other than a sister or brother of the child? • Care in own home by a brother or sister? • Care in own home by a non-relative? • Care in a daycare centre (including workplace)? Is the child care program or daycare centre operated on a profit or non-profit basis (include gov't sponsored care)? • Care in a before or after school program? For about how many hours a week 5. Do you currently use other childcare arrangements excluding care by a brother or sister? 6. Is ...cared for at home by his/her brother or sister on a regular basis while you (and your spouse/partner) are working or studying? 7. What type of arrangement do you consider your main one? – choices 8. Have you *ever* used childcare for ...while you (and your spouse/partner) were at work or studying? 9. Last summer while..... was not in school, what type	• Work through a licensed agency, don't know if it is for profit or not for profit • Other

The Child's Care Experience	*Source of Questions...*	
	NLSCY	***Care Provider Survey***
	of child care arrangements did you use while you (and your spouse/partner) were at work/studying? 10. Did this parent take unpaid leave or quit a job to look after during the summer months?	
C.The Care Experience *1. Characteristics of the caregiver*	To your knowledge does this provider have any training in early childhood education, or childcare, at the college or university level?	1. What is your gender? Age group? 2. What is the highest educational level you have attained? 3. Do you have a certificate, diploma, or degree in Early Childhood Education (ECE)? 4. Are you taking courses to work towards obtaining a certificate, diploma, or degree in Early Childhood Education (ECE)? 5. How many years of experience do you have caring for children without pay? (Excluding occasional babysitting) 6. How many years of paid experience do you have caring for children? (Excluding occasional babysitting) 7. Have you taken any of the following types of training... • Courses in childcare? • Babysitting course? • Courses in nutrition? • Courses related to child development (psychology, family studies)? • Planning children's activities?

The Child's Care Experience	Source of Questions...	
	NLSCY	***Care Provider Survey***
		• Co-op placement or internship in childcare? • Parenting course? • Workshops/conferences (general)? • CPR and/or First Aid? • Other (please specify)_____ 8. In general, how would you rate your satisfaction with your job? 9. Why did you become a childcare provider? a) to be with young children b) to make an income c) so I can get children off to a good start d) because I get a lot out of it e) so that I can be home with my own children f) so I can be my own boss g) Other specifs
2. *Quality of Care* 2a. *Structural Indicators* *Adult to Child Ratios*	How many other children, if any, are cared for regularly by this relative/caregiver/daycare nursery school, before and after school program, or enrichment program whether part-time or full time (including his/her own children), for each of the following age groups 0-2,3-5, 6 years and over?	On a typical day, how many other children (including your own) are in care with [name of child]?

The Child's Care Experience	*Source of Questions...*	
	NLSCY	***Care Provider Survey***
Physical Setting	Does your child have a clean and safe area to play in – indoors and outdoors?	
Heterogeneity of Children in Care		What are the ages of the other children in your care?
2b. Process Indicators *Activities Encouraging Development*	1. How often...plan activities and use toys and other materials to help them learn new things? 2. How often...encourage language development by talking to him/her and asking questions, as well as using songs and stories for this purpose?	1. On a typical day, how frequently does the child do the following ... • Look at books or listen to stories • Colour or paint • Do arts and crafts • Practice writing • Take part in physical play like running and jumping • Play video games • Listen to music • Take naps/rest quietly 2. How many hours a day does the child watch television or videos? 3. How frequently do you the following with the children in your care. • Go to parks or playgrounds (indoor or Outdoor). • Go to the library. • Go to museums or zoos. • Go to shopping malls.

The Child's Care Experience	*Source of Questions...*	
	NLSCY	***Care Provider Survey***
		• Go to music, dance, sports, or other lessons. • Go to play groups or drop-in centres. • Go to visit other friends with children.
Caregiver-Child Interactions	1. How often would you say your caregiver praises and encourages child and responds promptly when they need comforting? 2. During the past 6 months, how well has she/he gotten along with his/her main childcare provider? 3. Overall how satisfied are you and your child with your current form of childcare?	1. For each of the following statements tell me how much it applies to your relationship with the child • If upset, the child will seek comfort from me • The child and I always get along • It is easy to be in tune with or to know what the child is feeling • The child remains angry or is resistant after being disciplined 2. On a typical day, how often do you have a chance to have a conversation with the child? 3. How important is each of the following? • showing warmth to the child • providing individual attention to the child • allowing the child to make decisions whenever possible

The Child's Care Experience	*Source of Questions...*	
	NLSCY	***Care Provider Survey***
		• disciplining the child • encouraging the child to express him/herself • being strict with the child • communicating with the child's parents 4. How much do you agree with the following statement? I have confidence that the child will do well in school.
Duration / Stability of Care	1. When did you start using this childcare arrangement? 2. Is this arrangement temporary, or do you think you will continue to have child cared for by this provider for at least another 6 months? 3. In the past 12 months how many times have you changed your main child care arrangements and/or caregiver, excluding periods of care by yourself (or spouse/partner) 4. What type of care did you use before you began using your main current method of care? (CHOICES) 5. What were the reasons for changing? • dissatisfaction with caregiver/program • caregiver/program no longer available • family or child moved, parental work status or custody changed • changes in child needs (e.g., special care, child's age)	1. How long has [name of child] been in your care? Number of years/ months 2. On a typical day, how many hours a day do you care for [name of child]?

The Child's Care Experience	*Source of Questions...*	
	NLSCY	***Care Provider Survey***
	• a preferred arrangement became available (e.g., subsidized space) • cost • other 6. Overall, how many changes in child care arrangements has... experienced since you began using child care, excluding periods by yourself (or spouse/partner)? 7. Overall how satisfied are you with your childcare?	

Table 2: Care Provider Survey – Source of Questions

Section	Question	Source
Introduction, screener and background	• Identify respondent • Obtain consent • Verify type of care (centre, home-based, child's home) and relationship to child (relative, non-relative)	• National Child Care Survey, 1991 (P) • Survey of Unregulated Family Childcare Providers, 1996 (CP) • Survey of Home Child Care Providers, 1996 (CP) • Caring for a Living, 1991 (CP) • Early Childhood Longitudinal Survey (P, CP, OBS)
The Child	• Time in care (do we need to repeat this if it is already asked of the parents?) • Separation/reunion behaviour • Content/involvement with the parent	• National Child Care Survey, 1991 (P) • Child Development Supplement (P) • Australian Living Standards (P) • Looking After Children, 1996 (P) • General Social Survey, 1996, (P) • National Child Care Survey, 1988 (P) • Early Childhood Longitudinal Survey (P, CP, OBS)
Other Children in Care	• Age and number of other children in care	• National Child Care Survey, 1991 (P) • Survey of Unregulated Family Childcare Providers, 1996 (CP) • Survey of Home Child Care Providers, 1996 (CP) • Early Childhood Longitudinal Survey (P, CP, OBS)
Learning Environment and Activities (Quality)	• Daily routines • Learning provisions • Activities	• National Child Care Survey, 1991 (P) • ECERS (OBS) • ITERS (OBS) • Arnett Scale (OBS) • Classroom Practices Inventory (OBS)

Section	Question	Source
		• Hunter, 1997 (Quality Assurance Paper) • Early Childhood Longitudinal Survey (P, CP, OBS) • Quebec Survey GRIP (1998)
Physical Safety	• Health and safety provisions	• National Child Care Survey, 1991 (P) • Hunter, 1997 (Quality Assurance Paper) • Early Childhood Longitudinal Survey (P, CP, OBS)
Caregiver Background	• Socio-demographic information • Prior Experience, Training and Education	• National Child Care Survey, 1991 (P) • Survey of Unregulated Family Childcare Providers, 1996 (CP) • Survey of Home Child Care Providers, 1996 (CP) • Caring for a Living, 1991 (CP) • Early Childhood Longitudinal Survey (P, CP, OBS)

(P)= parent questionnaire; (CP)= care provider questionnaire; (OBS)= observational study. Most surveys of non parental care that measure quality of care do so through direct observation. This is not possible as we are doing a telephone survey with the care provider. How do we measure quality by asking the care provider specific questions?

5.4.1 Child Care Selection

The framework describes several factors that have the potential to influence a parent's decision to place their child in care, and the type of care that is received. Family structure and socio-economic status for instance, have been said to have big impacts on care selection. Though not included in the NPC component, other components of the NLSCY question families, in detail, about their economic and demographic characteristics that can influence care selection and subsequently child development.

Child care costs are an important and related issue in care selection. Less than one half of Canadian four-year-old children from low-income families attend a regulated daycare or preschool program, indicating that costs could be a significant barrier preventing access to quality child care for disadvantaged families. Measuring the costs of various forms of care arrangements relative to income is important in understanding why parents chose one form of care over another and how this may affect a child's development. The questions regarding child care costs were taken from the National Child Care Survey (1988).

The attachment theories suggest that early separation of an infant from his or her mother could lead to developmental problems as the child ages. As a result, many studies have examined whether the child's age at first entry into care had deleterious effects on subsequent adjustment and development. However, results from that research have been inconsistent, with some studies finding negative, others finding positive, and still others finding no effects of age at entry. This stresses the importance of studying the age of entry into care in the NSLCY in order to determine the short and long term impacts it may have on development.

The additional questions in the NPC section of the survey focus more specifically on the options parents consider when selecting their main NPC arrangements and the principal factors that may influence this decision.

5.4.2 Type of Care Employed

The NLSCY has a strong section defining the types of care that children receive, the number of hours normally spent in care, and for some care settings, whether the arrangement was licensed. Care arrangements that are licensed must follow certain government-approved regulations and standards that are likely to affect the quality of care provided and may have an impact on child

development. Currently, licensing questions are only asked of providers of children who are cared for outside of their own homes. It is, however, important to know which children, in all types of care settings, are being cared for by licensed providers. Therefore, it is recommended that questions about the licensing of caregivers who provide care in the child's home (both relatives and non-relatives) also be included. In addition, it is also recommended that care providers be questioned about their licensed status, as parents may not be aware of it.

Enrichment programs represent a relatively new form of non-parental care. As these programs become more prevalent across the country, and increasing numbers of children are being cared for in such arrangements, their use should be studied. It is suggested that enrichment programs be included as a NPC option when parents are classifying their main care arrangement.

5.4.3 The Care Experience of the Child

This section of the framework focuses on the experiences that children have in NPC and how the characteristics of the care arrangement and caregiver can affect their development. It was divided into four main sections, the characteristics of the caregiver, the quality of the care environment and daily activities, the influence of the type of care received (covered in previous section) and the duration and stability of the care.

Characteristics of the caregiver: Only one question under this heading is currently included in the NLSCY and all of the additions will be included in the care provider survey as providers themselves are best equipped to answer questions regarding their education, experience, and job satisfaction.

Quality of care: This is an extremely important section, as much of the research indicates that quality is a key factor in influencing child outcomes. Questions from this section have been further subdivided according to the type of factor that is measured (i.e., structural or process). The bulk of the recommended additions are to the care provider survey as providers are better suited than parents to comment on the activities and interactions of the children on a day to day basis (see Table 1 for details).

Duration/stability of care: The NLSCY currently questions parents about their child's history in care, their reasons for changing care providers and the stability of the current care arrangement. This information is now supplemented in the care provider survey by the caregiver's account of

the length of time he/she has been caring for the child and the amount of time the child spends in his/her care on a daily and weekly basis.

5.4.4 Child Outcomes

Outcomes during the early years must be measured in order to understand the characteristics of the child care experience that influence children's subsequent development. Although developmental outcomes are not directly measured in the care provider survey, the larger NLSCY provides comprehensive information about each of the 5 spheres of development, thus ensuring the relationships between child care and development can be adequately studied.

Appendix

Measurement Instruments

The following is a list of instruments, discussed in the bibliography, which have been used to study the impacts of NPC on children's development. It includes measures of family background characteristics, child outcomes, and various aspects of the NPC environment. Full descriptions were not available in the articles for many of the instruments, however, for each instrument we have listed an additional reference that should provide further information.

A.1 Family Measures

Life Events Questionnaire

Coddington, R.D. (1972). The significance of life events as etiologic factors in the distress of children II: A study of a normal population. *Journal of Psychosomatic Research*. Vol. 16. p. 205-213.

Parenting Stress Index (PSI-short form)

Abidin, R.R. (1990). Parenting Stress Index Short Form: Test Manual. Charlottesville, VA: *Pediatric Psychology Press.*

Family Adaptability and Cohesion Evaluation Scale (FACES-II, abbreviated form)

Olson, D.H., Russell, C.S. & Sprenkle, D.H. (1989*). Circumplex model: Systemic assessment and treatment of families*. New York: Haworth Press.

Parental Responsibility Questionnaire (PRQ)

Lamb, *et al.*, (1988). The determinants of parental involvement in primiparous Swedish families. *International Journal of Behavioural Development*. Vol. 11. p. 433-449.

Availability of Social Support

Marshall, N.L. & Barnett, R.C. (1993). Work-family strains and gains among two-earner couples. *Journal of Community Psychology*. Vol. 21. p. 64-78. Or Marshall, N.L., and Barnett, R.C. (1993). Variations in job strain across health care and social service settings. *Journal of Community and Applied Social Psychology*. Vol. 3. p. 261-271.

A.2 Child Temperament

Block's California Child Q-Set

Block, J.H. & Block, J. (1980). The role of ego-control and ego-resiliency in the organisation of behavior. In W.A. Collins (Ed.), *Minnesota Symposium on Child Psychology*. Vol. 13. p. 39-101. Hillsdale, NJ: Erlbaum.

Baumrind's Preschool Behavior Q-Sort

Baumrind, D. (1968). *Manual for the preschool behavior Q-sort.* Berkeley. University of California, Institute of Human Development.

Infant Characteristics Questionnaire

Bates, J.E. & Bayles, K. (1984). Objective and subjective components in mothers' perceptions of their children from age 6 to 3 years. *Merrill-Palmer Quarterly*. Vol. 30. p. 111-130.

A.3 Child Care Quality Indicators

There are a number of indices of the quality of the caregiving environment.

a. Centre-based care:

The Early Childhood Environment Rating Scale (ECERS - for children over 30 months) and the Infant-Toddler Environment Rating Scale (ITERS - for children 30 months and under)

These scales were designed (see Harms and Clifford 1980, 1986) specifically for the purpose of measuring process quality in centre-based care in the United States and require on-site observation of the care arrangement by trained observers. One scale is for children over 30 months while the other is for children under 30 months. Each index consists of about 30 items on which each classroom is scored on a Likert-type scale of 1 to 7 by an observer over a minimum of a two-hour period. The items include the physical setup of the room; furnishings and materials; personal care routines such as greeting, meals, snacks, diapering, health practices, and departure; learning activities such as use of language, art, music, movement, blocks, sand, pretend play; adult-child and child-child interactions, including discipline; and program structure. A complete list of items and some examples of instructions to the observers on how to score them are attached. These items can be broken down into seven different dimensions:

- personal care routines
- furnishings and display
- language and reasoning experiences
- fine and gross motor activities
- creative activities
- social development
- adult needs

The global score, ranging from 37 to 259, provides ratings from "inadequate" to "excellent" (inadequate: 37-92; minimal: 93 to148; good: 149 to 203; and excellent: 204 to 259). The overall ECERS and ITERS scores can also be broken into two subordinate scales known as the Developmentally Appropriate Activity Index and the Appropriate Caregiving Index. The former incorporates items related to materials, schedule, and activities; the latter incorporates items related to adult-child interactions, supervision and discipline.

The Caregiver Interaction Scale

This instrument is used in centre-based care to rate individual teachers. It consists of 26 items characterizing the nature of the teacher's interaction with children in the classroom. Each teacher is rated by an observer on a scale of 1 to 4 on each item, where 1 represents the lowest score and 4 the highest. The 26 items are aggregated into three scales, measuring sensitivity (SENSITIVE),

harshness (HARSH), and detachment (DETACHED). Note that the latter two are "bad" outcomes, with higher scores representing lower quality of care. See Arnett, J. (1989). Caregivers in child care centers: Does training matter? *Journal of Applied Developmental Psychology*. Vol.10. p. 541-552.

The Adult Involvement Scale

This instrument uses time-sampled observations to measure the intensity of teacher-child involvement in centre-based care. See Howes, C. and Stewart P. (1987). Child's play with adults, toy, and peers: An examination of family and child-care influences. *Developmental Psychology*. Vol. 23. p. 423-430.

Arnett Scale of Provider Sensitivity

This scale was designed for use within child care settings and distinguishes among providers with different levels of training and different attachment relationships with children. It consists of 26 items, each rated on a 4-point scale. See Arnett, J. (1989). Caregivers in child care centers: Does training matter? *Journal of Applied Developmental Psychology*. Vol.10. p.541-552.

The EDCOS

This is one of the assessment tools developed to provide guidelines for daycare centre accreditation. It includes 87 items rated from 1 to 3, grouped in 13 different dimensions:

- staff-child interactions
- curriculum
- staff-parent interactions
- staff training
- management
- staffing
- physical environment
- health and safety
- nutrition
- evaluation
- Low quality centre - poor or inadequate care - a score of 148 or below
- High quality - excellence - 204 or above
- Medium quality - scores between 148-204

b. Family-daycare:

The Family Daycare Rating Scale (FDCRS)

This indictor was developed to provide a 6-factor assessment of the quality of home-based care. The six factors or areas of caregiving practices include space and furnishings, basic needs, language and reasoning, learning activities, social development and adult needs. The scale has a

total of 33 items. Each item is rated on a 1-to-7 scale, with a score of 1 indicating inadequate practices and a score of 7 indicating excellent practices (3 = adequate; 5 = good).

A.4 Global Indicators

The Belsky and Walker Spot Observation Checklist

This instrument includes 3 positive and 7 negative events, with an observer noting whether each occurred during three minute long spot-sample units. It was used in the Goteborg study, both as a supplemental measure of the quality of care in the child's home and to measure process quality in out-of-home types of care (see Broberg, Wessels, Lamb, and Hwang, 1997; Lamb, Hwang, Broberg, and Bookstein, 1988). See Belsky, J. and Walker, A. (1980). *Infant-Toddler center spot observation system.* University Park: Pennsylvania State University, Department of Individual and Family Studies.

The Observational Record of the Caregiving Environment (ORCE)

This scale is used to assess the quality of care in the child's home, in a child care home and in a child care centre. The ORCE is composed of behavioral scales, which are frequency counts of specific caregiving acts with the child, and qualitative ratings, which are ratings of the quality of the caregiver's behavior with the child. The ORCE is constructed using four 44-minute cycles of observations by trained observers. Observations usually take place over two days within a two-week period.

The behavior scales enumerate the frequency of the following kinds of behaviors:

- shared positive affect
- positive physical contact
- responds to vocalization/child's talk
- speaks positively to child
- asks questions of child
- other talk to child
- stimulates cognitive development/ teaches academic skill
- facilitates behaviour
- mutual exchange
- negative/restricting actions
- speaks negatively to child
- child watching/ unoccupied/ transition

A qualitative rating is completed at the end of each 44-minute cycle and includes the following:

- sensitivity/responsiveness to non-distressed communication
- stimulation
- positive regard

- detachment/disengagement
- flat affect
- intrusiveness (at 36 months)
- fosters exploration (at 36 months)

The ORCE is currently being used by the NICHD study. Thirty-six months into this study, the researchers have found that the scales of the ORCE are substantially similar at all assessment ages, with minor modifications to accommodate the increasing developmental complexity of caregiver-child interactions. See Arnett, J. (1987). Training for caregivers in daycare centers. Paper presented at the biennial meetings for the Society for the Research in Child Development, Baltimore, MD.

The NICHD version of ORCE

At each age of measurement, two composite measures of child care quality were created, one based on frequencies of behaviors, the other on qualitative ratings of behavior. *The Positive Caregiving Frequency composite* represented the summed, standardized frequencies of nine categories of positive caregiving behavior. At 6 months the categories included were: shared positive affect, positive physical contact, responds to infant's vocalization, asks question of infant, other talk to infant, stimulates infant's development, facilitates infant's behavior, and reads to infant (Cronbach's alpha = .89). At 15, 24, and 36 months, five additional categories were included in the composite: positive talk to child, restricts child's activity, negative talk to child, negative physical contact with child, and child unoccupied, with negatively oriented behaviors (e.g., restricts) scored in reverse (alpha = .78). The second composite variable at each age, *Positive Caregiving Ratings*, was generated at 6, 15, and 24 months by summing five qualitative ratings made at the end of each observation cycle: Sensitivity/responsiveness to child's non-distress expressions; positive regard; stimulation of cognitive development; detachment (reversed); and flat affect (reversed). At 36 months, two additional categories, fostering exploration and intrusiveness (reversed) were added to the composite. Cronbach's alphas were .89, .88, .86, and .82 at 6, 15, 24, and 36 months, respectively.

A.5 Home Quality Measurements

Home Observation for Measurement of the Environment (HOME)

This instrument has different versions according to the age of the child. The items on this scale measure the degree to which the child's home environment provided emotional support and cognitive stimulation. It was also used in the Goteborg study to measure the quality of care provided in the parental home. The short version of HOME includes 26 yes/no items (14 for cognitive stimulation and 12 for emotional support) that are rated by either mother's responses to questions or direct observations of the homes. Home observation for measurement of the environment: A revision of the preschool scale. *American Journal of Mental Deficiency*, 84, 235-244. Caldwell, B.M. (1970). *Instruction manual. HOME inventory for infants*. Little Rock: Department of Early Childhood Education, University of Arkansas. Caldwell, B.M. and Bradley, R.H. (1984). Home observation for the measurement of the environment (Rev. ed.). Little Rock: University of Arkansas, College of Education.

A.6 Child Outcome Measures

a. Academic readiness/cognitive skills

The 1970 version of the Peabody Individual Achievement Test (PIAT)

The PIAT consists of five subtests - mathematics, reading recognition, reading comprehension, spelling, and general information. See Dunn L. and Dunn L. (1981).

The Peabody Picture Vocabulary Test-Revised (PPVT-R)

Dunn, L. & Dunn, L. (1981). *Peabody Picture Vocabulary Test-Revised (PPVT-R) manual.* Circle Pines, Minnesota: American Guidance Services

Woodcock-Johnson Tests of Achievement-Revised (WJ-R) (To assess pre-academic skills)

Woodcock and Johnson (1990). Woodcock, R.W. & Johnson, M.B. (1989). *Woodcock-Johnson Psycho-Educational Battery-Revised.* Allen, TX: DLM Teaching Resources.

The WRAT-R (English reading test)

Jastak, S. & Wikinson, G.S. (1984). *Wide Range Achievement Test-Revised.* Wilmington, Delaware: Jastak Associates, Inc.

KeyMath

The measure has five subscales: numeration, addition, subtraction, time and money, problem solving. Connolly, A.J. (1991). *Canadian Edition of Key Math-Revised: A Diagnostic Inventory of Essential Mathematics*. Toronto: Psycan Corporation.

French receptive language measure

Dudley, J. & Delage, J. (1980). *Tests de Langage Dudley/Delage*. St. Lambert, Quebec: Les Éditions de l'ABC.

The WPPSI BLOCK Design (for problem solving)

Wechsler, D. (1963, 1967). *Wechsler Preschool and Primary Scale for Intelligence.* Cleveland, Ohio: The Psychological Corporation.

The Digit Span Subscale of the Wechsler Adult Intelligence Scale-Revised (WISC-R).

Used for measuring child's short-term memory and attentiveness. See Wechsler, D. (1974). *Wechsler Intelligence Scale for Children-Revised (WISC-R).* New York: The Psychological Corporation.

b) Social/behavioral development

The Classroom Behavior Inventory (CBI)

Schaefer, E.S. & Edgerton, M. (1976). *Classroom Behavior Inventory*. Unpublished rating scale.

Student-Teacher Relationship Scale (STRS)

Pianta, R.C. & Steinberg, M. (1992). *Teacher-child relationships and the process of adjusting to school. New Directions for Child Development.* Jossey-Bass Publishers.

Behavioral problems were measured using the Teacher Report Form (TRF)

Achenbach, T.M. & Edelbrock, C.S. (1986). *Manual for the Teacher's Report Form of the Child Behavior Profile.*

The Teacher Checklist of Peer Relations [This checklist contains a set of items that assess teacher judgements on 5-point scales (ranging from very poor to very good) of children's social skillfulness with peers, and includes items such as "understands others' feelings."]

Coie, J.D. & Dodge, K.A. (1988). Multiple sources of data on social behavior and social status in the school: A cross-age comparison. *Child Development.* Vol. 59. p. 815-829.

The Social Problem Solving Scale

Dodge, K. (1993). Social Problem Solving Scale. Unpublished Manuscript. FAST-Track Project. Nashville, Tennessee: Vanderbilt University.

The Preschooler Behavior Checklist (PBC) (Twenty-two items are scored by the teacher as present, absent, or unsure, yielding a total score.)

McGuire, J. & Richman, N. (1986). Screening for behaviour problems in nurseries: The reliability and validity of the preschool behaviour checklist. *Journal of Child Psychology and Psychiatry.* Vol. 27. p. 7-32.

The Social Competence Scale (SCS) (The SCS assesses the social behavior of 3- to 6-year-old children in a group setting. It contains 73 items describing the child's interaction with caregivers as well as other children. Each item is rated in a 5-point Likert-type scale according to the frequency of the behavior. The scale yields scores in two separate factors: factor I (SCS-I) interest-participation vs. apathy-withdrawal, and factor II (SCS-II) anger-defiance vs. cooperation-compliance. Assessments are often assessments completed by the child's teacher.)

Kohn, M. & Rosman, B.L. (1973). A two-factor model of emotional disturbance in the young child: Validity and screening efficiency. *Journal of Child Psychology and Psychiatry.* Vol. 14. p. 31-56.

Peer Aggression Scales

Coie, J.D., Dodge, K.A. and Coppotelli, H. (1982). Dimensions and types of social status: A cross-age perspective. *Developmental Psychology.* Vol. 18. p. 557-570.

The Child Behavior Checklist (for providers)

Achenbach, T.N., Edelbrock, C. and Howell, C.T. (1987). *Journal of Abnormal Child Psychology*, 15, 629-650.

Achenbach, T.M. (1991*). Manual for the Child Behavior Checklist and the Revised Child Behavior Checklist (2nd edition).* Burlington: University of Vermont.

Preschool Behaviour Questionnaire

Tremblay, R., *et al.* (1987). "The Preschool Behaviour Questionnaire: Stability of its factor structures between culture, sexes, ages and socioeconomic classes." *International Journal of Behavioral Development.* Vol. 10. p. 467-484.

The Attitudes/Perceptions of Competence Measure

Stipek, D. (1993). Attitudes/Perceptions of Competence. Unpublished rating scale.

Marsh Self Description Questionnaire

Marsh, H.W. (1988). Self-Description Questionnaire-I. New York: The Psychological Corporation.